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ABSTRACT

This report represents the phase two evaluation of the New Zealand Ministry of Education's "School's Network," or "Schoolsnet." The Schoolsnet is a computer service offered by the Ministry of Education as a pilot project that allows teachers and students to gain access to a computer-based communications and information system. One hundred sixty-two schools took part in the evaluation, and staff and students answered questionnaires, participated in interviews and observations, or were involved in the pilot process. Use of Schoolsnet by teaching staff and students in elementary, secondary and area schools is examined, as well as the value of Schoolsnet to education. The specific aims of the study included: (1) to find out about the user population in terms of who uses it, their extent and purpose of use, what features of the Schoolsnet were used, and what was the level of Internet use from Schoolsnet; (2) to determine what influences a person's "three phases of use of the Schoolsnet" (exploration, discovery, and promotion); (3) to explore how the curriculum content and features of the Schoolsnet have enhanced the learning process; (4) to study how physical and environmental features affect the use of Schoolsnet; (5) to determine what is needed for the future, especially in terms of services, content, and charges; and (6) to identify what has changed since the phase one study. Appended are: (1) Research Instruments; (2) Questionnaire Results by Role in Schools and Other Data; and (3) Computer Terms Used in Report. (Contains 14 references, 3 figures, and 2 tables.) (AEF)

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Schools Network Evaluation
Phase Two

David Harris

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Te Rūnanga o Aotearoa mō te Rangahau I te Mātauranga

Schools Network Evaluation

Phase Two

David Harris

NZCER

New Zealand Council for Educational Research

Wellington

1996

New Zealand Council for Educational Research
PO Box 3237
Wellington
New Zealand

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ABSTRACT

The phase two study of the Schoolsnet has, as its main purpose, the gaining of a more complete understanding of the process that influences how a person learns to use the network, discovers what it has, integrates the network into the learning environment, and promotes further use. Furthermore, the value to the curriculum and the learning process is examined, along with how it physically fits into a school and what is needed from the Schoolsnet in the future.

ACKNOWLEDGMENTS

This project has benefited from the co-operation of a great many people. Thanks for their participation are especially due to all principals, teachers, other school staff, and students for their help in the pilot and information gathering phases.

Many staff at NZCER were involved in this study, and I do wish to express my appreciation to; Sally Boyd and Peter Keegan for assisting in research instrument design, Lia Burgess, Elizabeth Wagner, and Anita Walford who arranged the questionnaire delivery and school visits, Barb Bishop and Steve Falloon who maintained computing resources and ran the data analysis, Carlene Grigg and Nicky McKibbin who produced the graphing and final report, Cathy Wylie and Val Podmore who helped in discussions on various aspects of the research, and Graham Wagner and Anne Meade helped with direction and review of the study and report.

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CONTENTS

	Page
Abstract	iii
Acknowledgments	iii
Summary	ix
Chapter 1 Introduction	1
The Phase one study	1
The objectives of the phase two study	2
Chapter 2 Method	3
Instrument design and sample size	3
Advisory committee and the pilot phase	4
Data gathering and the school visits	4
Responses to the survey	5
Data analysis	8
Chapter 3 Results	9
Patterns of use; who uses what, when, where, and why?	9
Communication	9
Information	11
Information features	11
Students use	12
Frequency of use	13
Login locations	15
Purpose of use	18
Internet usage	19
The three stages of use – "exploration, discovery, and promotion"	21
Exploration	21
Discovery	24
Promotion	27
The Schoolsnet's contribution to the learning process	29
Teaching objectives with the Schoolsnet	29
Schoolsnet items usefulness to classroom teaching	30
Schoolsnet contribution to students' education	32
Schoolsnet in the curriculum	35
The interviews and Schoolsnet in the curriculum	39

Schoolsnet in the school, the physical modifications and requirements 41
Changes from the stage one study 42
Indicators of the future 43
Charges and the Schoolsnet 44
Final remarks 48

Discussion 51
Using the Schoolsnet 51
Schoolsnet Discovered 52
The Schoolsnet contributes to the learning process 53
Placement and purpose, Schoolsnet in the school 54
What has been in the past and is wanted for the future 55
How much to use the Schoolsnet? 56
The potential is more than the actual 57

Bibliography 59

Appendix A Research Instruments 61

Appendix B Questionnaire Results by Role in Schools and Other Data 73

Appendix C Computer Terms used in this report 85

TABLES

Results

Table 1	Questionnaires returns by school	5
Table 2	Usefulness rating of Schoolsnet items for inclusion in teaching	31

Appendix B

Table B1–1 :	Role in school compared to frequency of use	73
Table B1–2 :	Role in school compared to login location	73
Table B1–3 :	Role in school compared to frequency of using the Internet	74
Table B1–4 :	Role in school compared to what Internet features are used	74
Table B1–5 :	Role in school compared to Schoolsnet features used	75
Table B1–6 :	Role in school compared to overall purpose of use	77
Table B2–1 :	Role compared with familiarity with networks before beginning use of the Schoolsnet	77
Table B2–2 :	Role compared with current familiarity with the Schoolsnet	77
Table B2–3 :	Role compared with what support there was when exploring Schoolsnet	78
Table B2–4 :	Role compared to what caused you to look into Schoolsnet	78
Table B2–5 :	Current familiarity with Schoolsnet and available support	78
Table B3–1 :	Role compared with rating of Schoolsnet's usefulness in teaching essential skills	79
Table B3–2 :	Role compared to rating of Schoolsnet's usefulness for contributing to essential learning areas	81
Table B4–1 :	Role compared with charging preference for Schoolsnet	82
Table B5–1 :	Low-frequency users' rating of Schoolsnet usefulness in teaching essential skills and assisting in the essential learning areas	83
Table B5–2 :	As a low-frequency user, what support did you get?	83
Table B5–3 :	Schoolsnet promotion among low-frequency users	84
Table B6–1 :	Response by school type and size	84
Table B6–2 :	Response by school type and region	84

FIGURES

Figure 1	:	Position of User Questionnaire Returners	5
Figure 2	:	Questionnaire by "MOE School 95 Data" Area Type	6
Figure 3	:	Questionnaire by Local Authority Region	7
Figure 4	:	Questionnaire by Decile	7
Figure 5	:	Use of Schoolsnet Communication Features	10
Figure 6	:	Diary/Log – Features Used	11
Figure 7	:	Usage of Schoolsnet information features	12
Figure 8	:	Students' Activities on the Schoolsnet	13
Figure 9	:	Frequency of Use	14
Figure 10	:	Students' Logins to Schoolsnet	15
Figure 11	:	Login Locations	16
Figure 12	:	Diary/log Login Locations	17
Figure 13	:	Student login locations	18
Figure 14	:	Purpose of Use from the Diary/log	19
Figure 15	:	Internet Use via Schoolsnet	20
Figure 16	:	Internet Features Used	21
Figure 17	:	What Caused your Interest in Schoolsnet	22
Figure 18	:	How Many Logins before You Felt Comfortable with Logging in?	23
Figure 19	:	What Helped Students Learn the Schoolsnet?	24
Figure 20	:	Did You Get Support when Exploring the Schoolsnet?	25
Figure 21	:	Support Available During Use of the Schoolsnet	26
Figure 22	:	Sources of Help for Student Users of Schoolsnet	27
Figure 23	:	Is the Schoolsnet Promoted?	28
Figure 24	:	How Often Do You Achieve Your Teaching Objectives with the Schoolsnet	30
Figure 25	:	Is Schoolsnet Available for Students	32
Figure 26a	:	Usefulness Rating of Schoolsnets Contribution to Essential Skills-Chart 1	35
Figure 26b	:	Usefulness Rating of Schoolsnets Contribution to Essential Skills-Chart 2	36
Figure 27a	:	Usefulness Rating of Schoolsnets Contribution to the Essential Learning Areas-Chart 1	37
Figure 27b	:	Usefulness Rating of Schoolsnets Contribution to the Essential Learning Areas-Chart 2	38
Figure 28	:	Additional Computer Features Desired for Schoolsnet	44
Figure 29	:	Should There be Charges for Schoolsnet?	45
Figure 30	:	Charging Preferences for Schoolsnet	47

SUMMARY

This phase two evaluation of the Schoolsnet examines usage by teaching staff and students in primary, secondary and area schools and the value of the Schoolsnet to education. The specific aims of the study included:

- to find out about the user population in terms of who uses it, their extent and purpose of use, what features of the Schoolsnet were used, and what was the level of Internet use from Schoolsnet;
- to determine what influences a person's "three phases of use of the Schoolsnet", that is, **exploration**, **discovery** and **promotion**;
- to explore how the curriculum content and features of the Schoolsnet have provided value to the learning process;
- to study how physical and environmental features affect the use of Schoolsnet;
- determine what is needed for the future, especially in terms of services, content and charges;
- identify what has changed since the phase one study.

Schools taking part in the evaluation numbered 162, with either staff or students answering questionnaires, participating in interviews and observations, or being involved in the pilot process. The schools that participated were spread fairly evenly over the decile rankings, however they were concentrated in main urban areas, especially around Auckland and Wellington. Included in this participation by Schools was the returning of 228 *Schoolsnet User* (Teaching and other school staff) *Questionnaires* from 144 Schools, 63 *Student Questionnaires* and 69 Diary Logs were received from about 20 schools, 29 schools were visited for interviews and observations, and 11 schools were involved in the piloting of the research instruments.

The main findings from the research include:

- communication is the most common purpose of use for the Schoolsnet with 81 percent of respondents to the *Schoolsnet Users Questionnaire* stating that e-mail is the most commonly used feature;
- gaining information was the purpose of 68 percent of teacher and school staff users, with directories and the General Noticeboard as the most frequently used information services;
- the home was the most common location for school staff members to login to Schoolsnet, with the classroom and library being the next most common login sites;

- over half of the Schoolsnet users had used it to access the Internet, with Internet e-mail as the most common means;

- the phase one evaluation (March 1995) found most users to be in the first **exploratory** phase of use, the phase two study (July 1996) reveals that most users have moved onto the second **discovery** phase of use;

- the main factors that motivated a teacher, or other school staff member, to look into and tryout the Schoolsnet were either their own interest in computer networks or attending technology training;

- when learning how to use the Schoolsnet, students relied on their teacher and fellow students, while staff relied upon the Reference guide, IT teacher development programmes, their colleagues in the school and the Help desks of the Schoolsnet unit and LEA;

- the most successful method of promoting Schoolsnet use by teachers in schools was by "buddy training" on a one to one basis, interviews revealed that in some cases the students had the knowledge to help the teachers learn how to use Schoolsnet;

- just under half of the respondents (42 percent) had teaching objectives with the Schoolsnet;

- the most used and useful curriculum item for teachers and students was the "Story corner/writing corner";

- most teachers with access to Schoolsnet made this access available for their students;

- students used the Schoolsnet for the following purposes in the following order, communication with other students for classroom and social activities, gaining information from noticeboards, and databases, experiencing how computers networks operate, and spreading their work; especially written work, for other students to see;

- a majority of teachers, principals and other staff ,61 percent, considers that Schoolsnet contributes to a students education, 92 percent of students replied that it helped their learning;

- replies from the *Schoolsnet Users Questionnaire* rated the essential learning skills that the Schoolsnet contributes most to as; communication skills, information skills, social and co-operative skills, and work and study skills;

- also from the *Schoolsnet Users Questionnaire* was a rating of the essential learning areas that Schoolsnet was seen as contributing most to, and these were; language and languages, technology, science and environment, social science, and personal development;

- the interviews revealed that the most significant physical, or environmental, factor to consider when placing the Schoolsnet access machine was the existing use of the space and how this affected a teacher or students access to the room housing the Schoolsnet linked computer;

- changes from the phase one study include, an evolution from most teaching and school staff being in the initial **exploratory** phase of use to the next level **discovery** phase of use; an increase of the use of alternative computer networks to Schoolsnet, a rising number of students using the Schoolsnet, and the support and "help" facilities of the Schoolsnet are being made use of by more people;

- among the curriculum improvements, most wanted by teachers are; lesson planning, guidance for integrating Schoolsnet into the classroom, and more material, such as resources and tests;

- the most commonly desired improvements for the computer system include, graphics, mouse control, and a colour screen, in short, easier to use software that "works" much like the other software on a classroom computer;

- regarding charges, a majority wanted no further charges for the Schoolsnet, although there was a feeling that a school will pay for an educational network that delivers content in a user friendly format;

- there was an overall feeling that Schoolsnet was good value and worthwhile, yet improvements and needs were strongly stated, along with a message that attitude towards the network was all important in attempts to encourage it, and future promotion efforts should realise this.

CHAPTER 1

INTRODUCTION

This report is on the phase two evaluation of the Ministry of Education's "Schools Network", or "Schoolsnet" as it is known. It examines Schoolsnet in terms of how it is used by school staff and students, what influences how a person learns to use it, how valuable has it been as a means of contributing to learning, how does it "fit into" the classroom, and what are the key issues for the Schoolsnet in the future.

The Schoolsnet is a computer service offered by the Ministry, as a pilot project, that allows teachers and students to gain access to a computer-based communications and information system. Utilising a modem and communications-software-equipped computer, the person using the Schoolsnet dials into the Ministry computer over conventional telephone lines and has access to information on the Schoolsnet machine, such as that offered by the "Noticeboards". The Schoolsnet allows communication between users via real-time "chat" or electronic mail (e-mail), and offers access to the Internet. At the time of the survey 459 schools were connected to the Schoolsnet covering primary, secondary, and area schools throughout the country.

Costs for using the Schoolsnet include having a modem-equipped computer and paying for phone-line usage at either the "business rate" ($0.04 per minute) for urban schools or the more expensive, and variable upon location, toll call rate (from about $0.20 to over a dollar a minute) for rural schools.

The Phase One Study

This phase two study expands upon the earlier phase one evaluation completed by Dave Atmore in March 1995. That study found the following in regards to the Ministry of Education's aims of the Schoolsnet, how it was used, and the value it offered:

- About 35 percent of respondents to the questionnaire used the Schoolsnet for curriculum and classroom purposes, and it was viewed as a valuable communication tool.
- People went through three "phases" in their use of Schoolsnet, firstly **exploration** on what features were available and how to make classroom use of the function and content of the Schoolsnet; secondly **discovery**, with increased confidence and enthusiasm for use; and the third and final phase was **promotion**, whereby expanded usage of the Schoolsnet among teachers and students was encouraged throughout the school.
- The Ministry of Education's early aims for the Schoolsnet pilot, namely encouraging schools to communicate with one another, provide access to the "wider electronic community" including the Internet, provide educational resources to schools and facilitate the flow of information between schools and the ministry, were perceived as being met in all but the last instance with no notable barriers in place to prevent this from happening.
- Training was seen as a very important feature to enable use of the Schoolsnet, especially in light of the different software (the "All in 1" package) compared with the *Acorn*, *Mac*, or *"Windows"* type software found on many school computers.

This phase two study goes further into the usage aspects of the Schoolsnet by teachers, other school staff, and students in terms of examining the factors influencing usage, and measuring the perceived educational value of the functions and content of the Schoolsnet. Over all a picture is sought on how the Schoolsnet contributes to the curriculum and the practical setup in a school environment.

The schools and people surveyed in this phase two study were not the same as those in the phase one study. There was a difference in research emphasis between the two studies and there was no longitudinal connection between them. The respondents referred to in this study include the teachers, principals, and other teaching and school staff who answered the *users' questionnaire, diary/logs*, participated in interviews, and contributed to the Schoolsnet "electronic noticeboard discussion". In cases where students replies from the *student questionnaire* are included with the respondent's replies, this is stated.

The Objectives of the Phase Two Study

The objectives of this second phase study included:

- to find out about the user population in terms of who uses the Schoolsnet, what features and aspects of it are used, how extensive is this usage, what is the purpose of the use, and what is the level of Internet use;
- to examine in more detail the influences that determine the "three phases" of exploration, discovery, and promotion of Schoolsnet;
- to explore how useful the curriculum content has been and what value the Schoolsnet is seen as having towards helping the learning process;
- to survey the physical modifications and factors that affect usage of the Schoolsnet;
- to gather indicators as to future use, especially regarding costs and services;
- to identify, where possible, any changes from the phase one study.

The main research emphasis was on the first three items with teaching staff and students being the central group for the study, with the focus being on how does the Schoolsnet fit into the curriculum and school learning environment.

CHAPTER 2

METHOD

A multi-method approach to the research was adopted to ensure as wide a possible survey of users of the Schoolsnet to enable a thorough understanding of the issues to be achieved. Accordingly, several ways of gathering the information were utilised. These included:

- A *users' questionnaire* sent to two hundred and thirty one schools connected to the Schoolsnet (3 per school) to be filled out by any school staff using the Schoolsnet, including principals, teachers, and any other school staff.
- Visits to twenty nine schools to carry out more detailed interviews and observe staff and student use of the Schoolsnet. Two researchers used a uniform interview schedule with the principal researcher interpreting the responses.
- A *diary/log* sent to those schools where the visits would occur to measure the usage pattern over a week.
- A *student questionnaire* also delivered to those schools where a visit and interviews would occur.
- A *discussion noticeboard* was established in the "Network Noticeboard" section of the Schoolsnet to allow any user to offer publicly readable comment on whatever aspect they wanted to discuss, or alternatively they could make those comments as a private direct e-mail response to the principal researcher.
- Discussions with providers of educational services on the Schoolsnet.

A copy of all the instruments are in appendix A.

The research process then followed a triangulated analysis of the information from different approaches. The first analyses the *users' questionnaire* through 3 levels, firstly by frequency of response to each question, secondly by cross-tabulation of questions to each other to understand the dynamic forces behind each answer, and thirdly, by cross-tabulating questions by groups of users to gain an impression of the different experiences among, for example, teachers, principals, and students. Other forms of data gathered such as from the *diary/log*, the *students' questionnaire*, and the *interviews and observations* were compared with the patterns found in the *user questionnaire*.

Instrument Design and Sample Size

The main instrument, the *users questionnaire*, went through design and pilot processes that included confirming the questions were relevant and could be related to one another to enhance the usefulness of the data they would supply. The instrument was reviewed by a wide range of NZCER staff to ensure clarity of wording and appropriateness for the issues to be studied. Final verification was from the advisory committee, and piloting of the *user questionnaire* process, which tested and approved the over all methods and instruments to be used for data gathering.

Secondary instruments included the *diary/log*, *students questionnaire*, and *interview schedule*, all of which were based on the main instrument. They sought:

- an "over time" perspective, such as daily usage patterns,
- views from students that could be directly compared with the view of their teachers who would have answered the *users questionnaire* or participated in interviews,
- an expansion from the questionnaire instruments in terms of who used what, how it was integrated into teaching the curriculum, and the physical factors associated with using the Schoolsnet in a school environment.

Sample size of the users survey was chosen at 50 percent of the schools connected to the Schoolsnet. This figure was both a practical one to work with, yet ensured that all types of schools would be represented in the survey. The school visits, *diary/logs* and *students questionnaires* involved 29 schools, including from Auckland (10), Wellington (2), the Hutt Valley (4), Paraparaumu (1), Christchurch (6), Dunedin (5), and Mosgiel (1). They were selected so as to ensure large and small primary and secondary schools were included. The pattern of using Schoolsnet among the visited schools included high, middle, and low frequencies of usage. This sample size was considered to be large enough to be representative of all users.

Advisory Committee and the Pilot Phase

An advisory committee was assembled and met twice during the project, firstly to discuss the data collection, approach, and coverage of the whole research effort, and secondly to consider the data analysis and reporting requirements. The membership of that committee included people from the Ministry of Education, New Zealand Council for Educational Research, the New Zealand Educational Institute, the New Zealand School Trustees Association, and the Post-Primary Teachers' Association.

Following on from the first advisory committee meeting, a pilot process was undertaken to test the main research instrument, gain an initial impression of placement of computers used for Schoolsnet activities, the physical factors influencing use, and indicate the main issues that surround the Schoolsnet in schools. Ten schools throughout Wellington, Porirua, the Hutt Valley, and Paraparaumu, including primary and secondary, were sent draft *users questionnaires,* and visits were then made to discuss the questionnaire and the Schoolsnet in general. This process further refined how the questions were to be asked in all the instruments.

Data Gathering and the School Visits

Three *users questionnaires* were sent to 231 schools that were shown at August 1995 to be connected to the Schoolsnet with an active "user I/D". A reminder letter sent out a short time after the requested return date of this instrument helped increase the rate of return. It was anticipated that not all 3 questionnaires would be filled out if there were not 3 users of the Schoolsnet in a school. This was certainly the case, with only a minority of schools returning 3 answered questionnaires.

All other data, except the Schoolsnet e-mail and noticeboard replies, were gathered as part of the school visits, the *diary/log* being sent prior to the visit and *student questionnaires* either completed during the visit or afterwards and returned via post. The school visits were carried out during November 1995 and took the form of interviewing adult users of the Schoolsnet and then students. In a number of cases observation of students using the Schoolsnet occurred and this reinforced the data from both the teachers' and students' written replies.

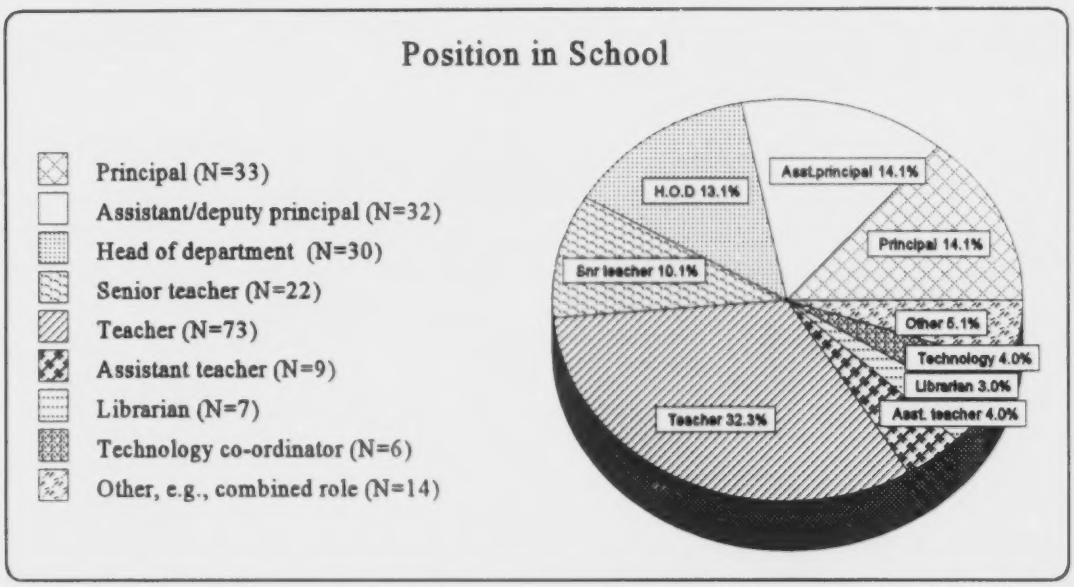
A follow-up phone call to retrieve all instruments was carried out at the end of November, and the last response arrived during December. The exception to this was the Schoolsnet discussion board, which was still getting one or two messages, posted on to it, during the early months of 1996, offering comment on usefulness, and what could be improved, for the Schoolsnet.

Responses to the Survey

Of the 231 schools that were approached, 162 did in some way take part in the evaluation, representing approximately a 70 percent response rate from schools. Questionnaires were returned by a variety of school staff and figure 1 illustrates the proportions and numbers.

Figure 1

Position of User Questionnaire Returners



A good cross section of roles are represented showing that Schoolsnet, while being teacher orientated, is used by people in other functions in the school. The returns by type of school and number of returns shown in table 1, again indicates a fair spread of respondents.

Table 1

Questionnaires Returned by School

School Type	1 return	2 returns	3 returns	Totals
Area	3	1	0	5
Primary	66	24	12	150
Secondary	16	14	9	71
Totals	85	78	63	226

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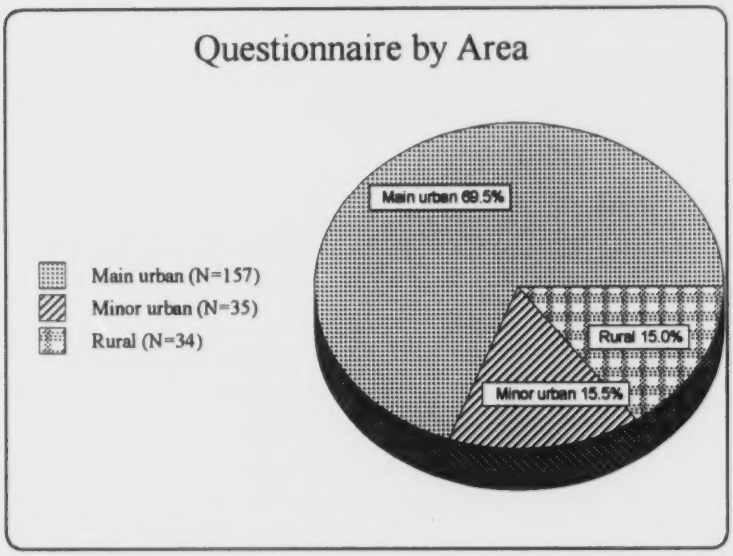
The returns showed strongly that urban schools were the most frequent users of Schoolsnet, indicating communication costs had a major impact on restricting rural use. The impact of costs will be examined in the results and discussion sections. Figure 2 shows this rural urban difference among the respondents.

Figure 2

Questionnaire by MOE School 95 Data Area Type



One important factor to be kept in mind when considering the urban bias is that communication, or phone costs, are from the school to the nearest Ministry of Education "node" or computer access point. As these are strung throughout the main centres, the close urban business phone rates are much cheaper than the rural-to-urban phone rates that must be paid by rural area Schoolsnet users.

The Schoolsnet has nearly doubled in terms of the number of schools and users since the phase one study and now has an extensive coverage throughout the country. This is reflected by the geographical diversity of respondents to the *users questionnaire* and shows responses from Northland to Otago.

There were however 3 educational areas from which no response was received, namely Nelson-Marlborough, West Coast, and Southland. The details of *user questionnaire* returns by region are shown in figure 3, which also reflects the urban emphasis.

An uneven number of *student questionnaires* were received from schools that returned them with some having only 4 students fill out the questionnaire, and in a few others 10 or more were completed.

To summarise the returns, from the 162 schools that participated;

- 228 *user questionnaires* were returned,
- 69 *diary/logs* were returned,
- 63 *students questionnaires* were returned,
- 10 pilot interviews and visits,
- 29 school visits for interviews and observations,
- 16 "open" written responses.

The written responses are mostly from the Schoolsnet Noticeboard and provided open comment on any aspect of Schoolsnet. They reflected a positive appreciation for the idea behind it and the way it was run, while highlighting practical areas for improvement.

Figure 3

Questionnaire by Local Authority Region

REGION	Number of Returns
Auckland (Akl)	81
Bay of Plenty (BOP)	7
Canterbury (CANT)	11
Gisborne (GIS)	1
Hawkes Bay (HAW)	6
Manawatu (MAN)	6
Northland (NTH)	15
Otago (OTG)	7
Taranaki (TAR)	2
Waikato (WAK)	31
Wellington (WGT)	59

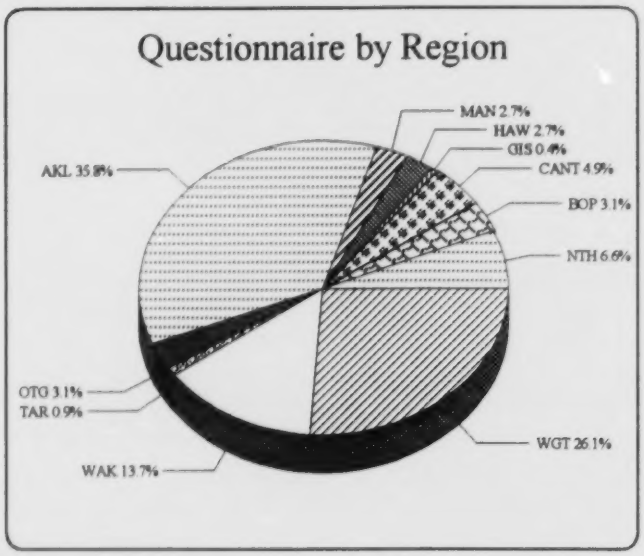
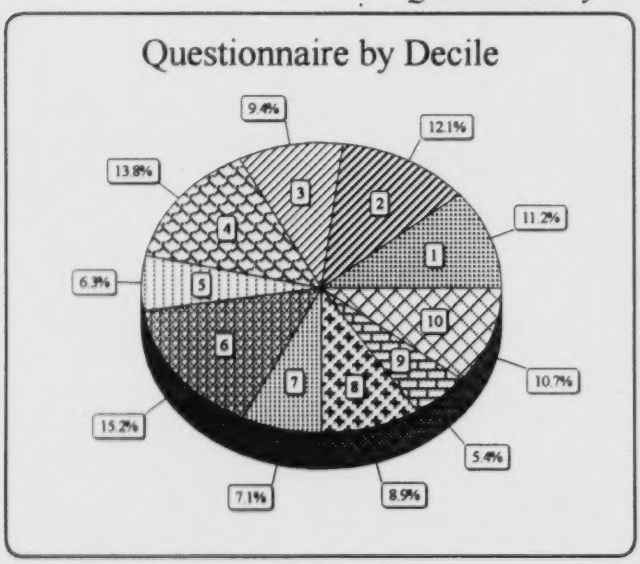


Figure 4 shows the *user questionnaire* returns by decile. Less of a difference appeared here than in the regional or rural-urban return statistics. The returns seem to indicate no decile group is totally excluded, and no group has an overwhelming presence on the Schoolsnet.

Figure 4

Questionnaire by Decile



Questionnaire Returns by Decile Ranking

Decile	*Number*
1	25
2	27
3	21
4	31
5	14
6	34
7	16
8	20
9	12
10	24

Data Analysis

The data analysis began with the answers from the *users questionnaire* being coded, keyed into a SAS database, and then run through an initial analysis which provided the frequencies of response to each question. Subsequently key questions were cross tabulated so that the results could be compared, for example what were the most frequent training or promotion methods among teachers who had teaching objectives with the Schoolsnet?

The results in figures 2, 3, and 4 are presented by number of respondents to the *users questionnaire* rather than by the number of schools that responded, when the returns by school are compared to the individual returns, a very similar picture emerges with all but a few percentages changing by more than 2 percent.

A further level of analysis was done whereby subgroups of respondents, such as students and teachers, had their answers compared with the whole results. This was used to analyse issues by the different roles within a school, for example, how do teachers compare with principals with regard to what features of the Schoolsnet are used?

Of particular importance at this stage was an analysis of infrequent users of the Schoolsnet compared to the overall user response. This illustrated a group of differences in using Schoolsnet that indicated the structures in schools that either hindered or promoted usage of the Schoolsnet. Also, the background and location aspects of the respondents were analysed to see what patterns of location and decile were reflected.

The other sets of information collected were the interviews and observations which allowed for a fuller discussion. Differences, clarifications, other significant points not raised on the questionnaires, and expansions on the topic were made in the interviews which were then compared with the main instruments results.

Observations of use was related to both the *student questionnaire* results and data from teachers about students using the Schoolsnet in the main instrument. Thus, what the students said about student use was compared to what the teachers said about student use, which was then compared with the instances of observing students use. This combined information showed how students were benefitting from the Schoolsnet and what they were actually doing.

The final sets of information to be considered were the *diary/log* and the open comments via the Schoolsnet which supplemented the questionnaire and interview data.

Central to the data analyses were the research objectives and questions. The results are presented below.

CHAPTER 3

RESULTS

Patterns of Use: Who Uses What, When, Where, and Why?

The first research objective was to seek a clear picture of who uses the Schoolsnet, what features are used, and the purpose and extent of use. To approach this, the questionnaire asked, what features of the Schoolsnet were used and how often. A 1–5 scale was selected whereby the respondent would circle **1** if they did not use the feature, **2** if they only occasionally used the feature, **3** if they were likely to use the feature, **4** if they frequently did, and **5** if they always used the feature. For discussion purposes they have been divided into two areas; communication and information.

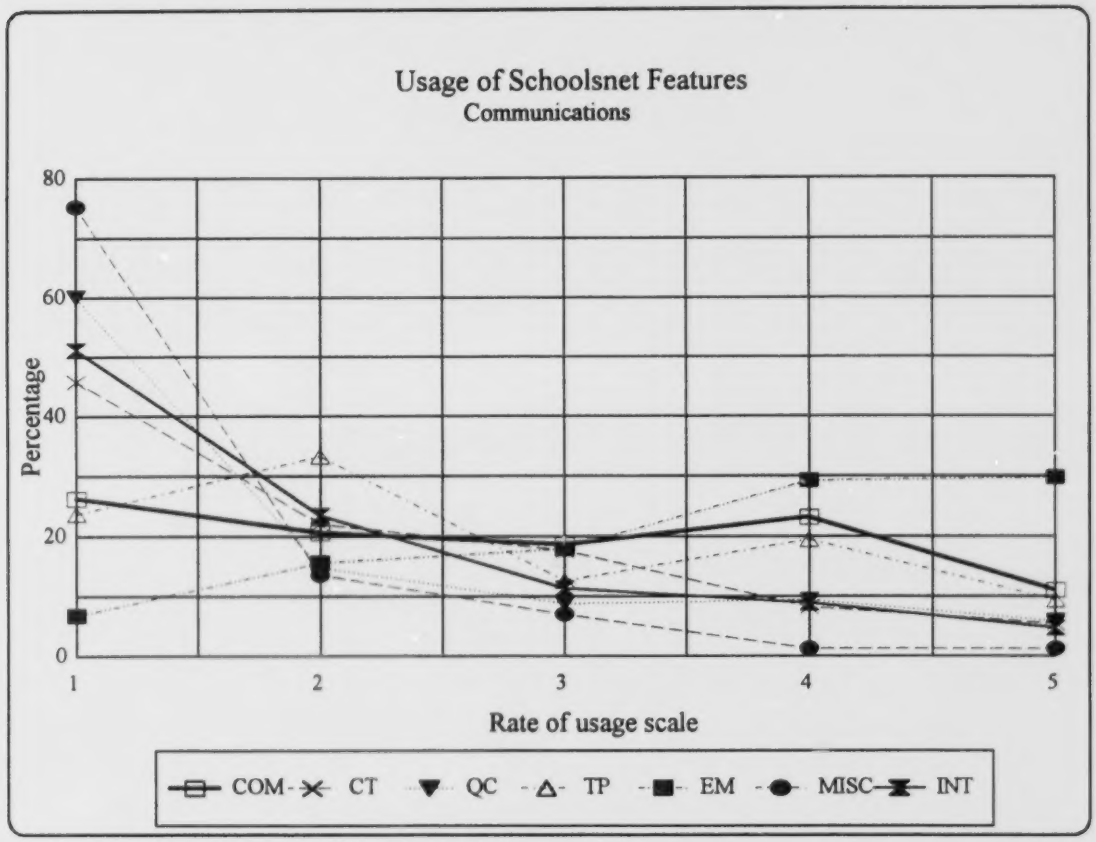
Communication

Communication features will comprise the first grouping for study as e-mail and chat are the most commonly used features with Telnet having a significant usage as well. Figure 5 displays the relative frequencies of use of the communication features on the 1 to 5 scale from the *users questionnaire*. The list below shows the communcation features at the time of the study, with the abbreviations used in the figures in this report.

- COM—Communications (On-line communicating such as using TP—Terminal phone to link to another computer and person on the Schoolsnet, and Telnet linking to another computer on the Internet.)
- CT—Connect to any system via Telnet (This question isolates Telnet usage out from COM which has Telnet as one of its options.)
- QC—Quick connect to any system via Telnet, a 'speed dial' facility with the addresses already entered to the most popular sites that people Telnet to.)
- TP—Terminal phone (Online communicating by typing messages to another Schoolsnet user currently logged on and entering into a real time discussion.)
- EM—Electronic Mail (e-mail to either any person who has a user identifier on the Schoolsnet or anyone with an Internet address on the Internet. Note: a Schoolsnet address is also an Internet address.)
- INT—Interrupt menu (Allows interruption when working with a current feature to go to TP, or Directories, read new e-mail, or use a scratch pad or desk calculator. Exiting the interrupt menu places you back in the original screen and function you were using.)

Figure 5

Usage of Schoolsnet Communication Features

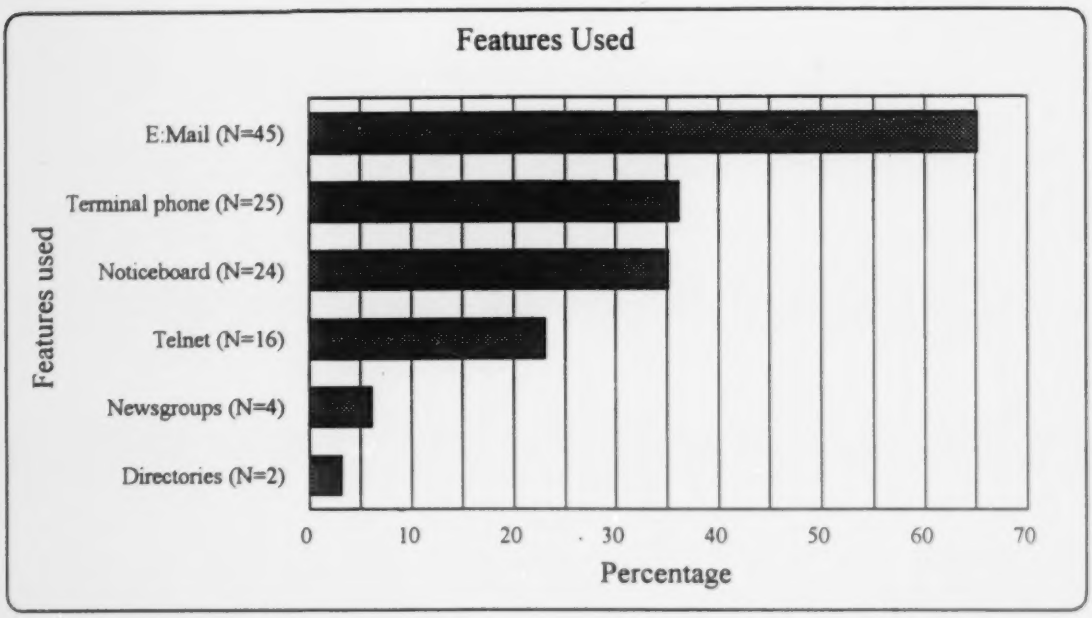


While quite clearly e-mail shows as the most used communications feature, there was an important minority of users of Telnet who used it for the following communication purposes; 8 percent of respondents connected with other schools and universities, 7 percent connected to machines with other Internet searching tools on them (such as 'Lynx'—a text based World Wide Web navigation tool) and 5 percent went to specific sites regularly, such as 'AskERIC and NASA.

The *diary/log* shows, in figure 6, that among the features used over the week, the communications aspects of e-mail and TP were the most frequently used, specifically during 65 percent of logins. The next most used feature ,TP, featured during 36 percent of the logins. A similar situation was evident in the interviews with e-mail as the dominant communication feature used.

Figure 6

Diary/Log—Features Used



Information

The second grouping of Schoolsnet features covers gaining information and are centred around noticeboards and directories. Below is a listing of the Schoolsnet items that may be classified as primarily used for handling information.

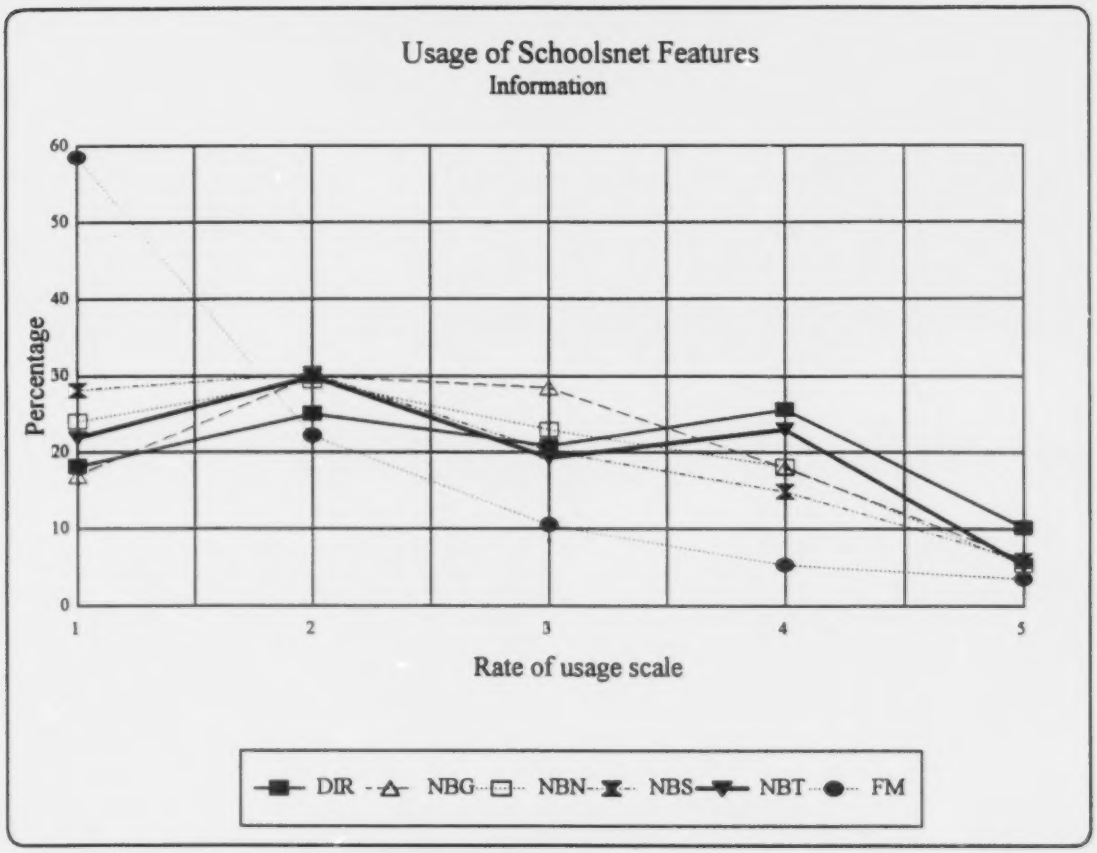
Information features

- DIR—Directories (Lists of users, their addresses and location information.)
- NBG—Noticeboard General (Advertisements, contacts, forum, notices and other items.)
- NBN—Noticeboard Network (Internet information, technical help and user feedback etc)
- NBS—Noticeboard Students (Brawny brainteasers, Opinion corner, Writers corner, International Action and other student activities.)
- NBT—Noticeboard Teacher (Education Gazette, NZQA information, policy statements and notices.)
- FM—File Management (Document transfer, file cabinet and word processing.)

Figure 7 shows the frequency of use of the Schoolsnet features dealing with information. The directory entry on the graph shows as the highest used function which may be due to its ease of use in getting quick current data relating to Schoolsnet, such as who is logged on at any moment.

Figure 7

Usage of Schoolsnet Information Features



A refinement on the usage of Schoolsnet features, that is by the respondents role in their school, may be found in table B 1.5 in the appendices. The most significant point from this information is that the different sub-groups, e.g., teacher, assistant teacher, or principal, had quite divergent patterns of use. For instance senior teachers said in 42 percent of responses, that they are likely to or frequently will use Telnet, compared with principals whose participation in the likely, frequently and always categories amounted to only 17 percent.

Students' Use

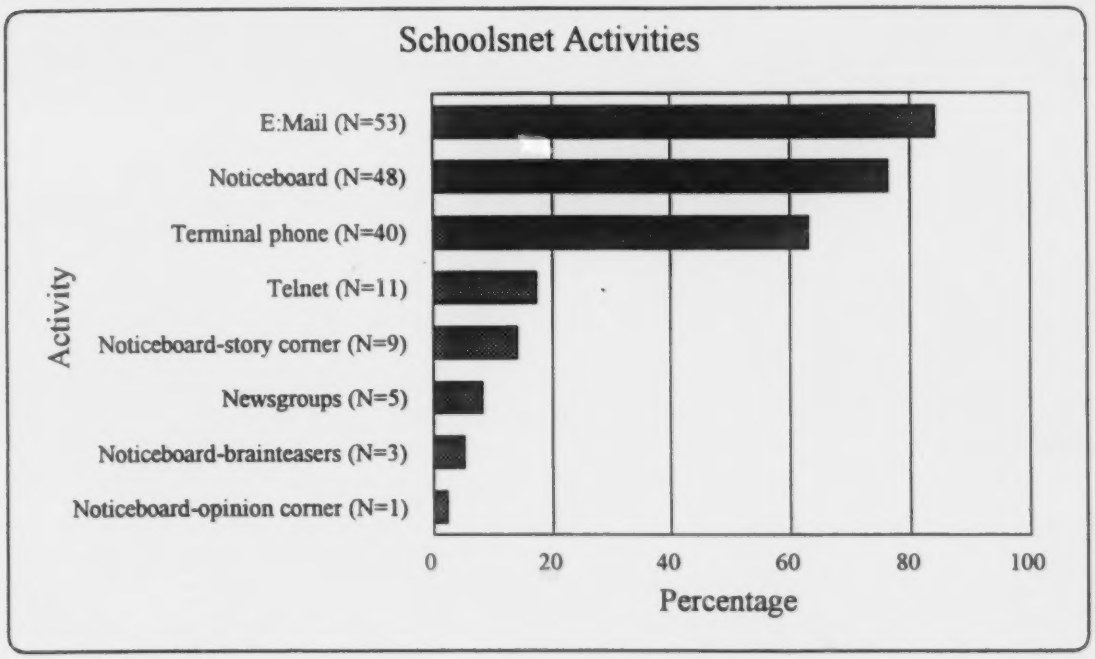
Among students, noticeboard use (including general, students and network noticeboards, as students do not have access to the teachers noticeboard), rated virtually as highly as e-mail use and above terminal phone. During observations of students this result was matched. In several schools students showed an interest and logged into the Student Noticeboard 'brawny brainteasers' and 'story corner', both with and without teachers supervision, to participate in the exercises. A qualifying point must be made in that it may have been the keenest students who showed up for the 30 to 40 minutes session using the Schoolsnet. The group size was between 3 and 7.

Observation showed regular changing of who used the keyboard among the group, accompanied by collective decision making on what was said and done. An interesting point regarding student use was that terminal phone and e-mail were considered to be quite interchangeable as communication

tools. When one group of students arranged to talk to another group in another school at a set time via chat and something prevented or disrupted this electronic 'live' meeting, then an e-mail message would be sent explaining why the meeting was missed, when the next one could be set up and anything else that they wanted to say in the chat session. Figure 8 shows the activities that the students responding to the *students questionnaire* had participated in, with the majority having used e-mail, noticeboards and terminal phone.

Figure 8

Students' Activities on the Schoolsnet



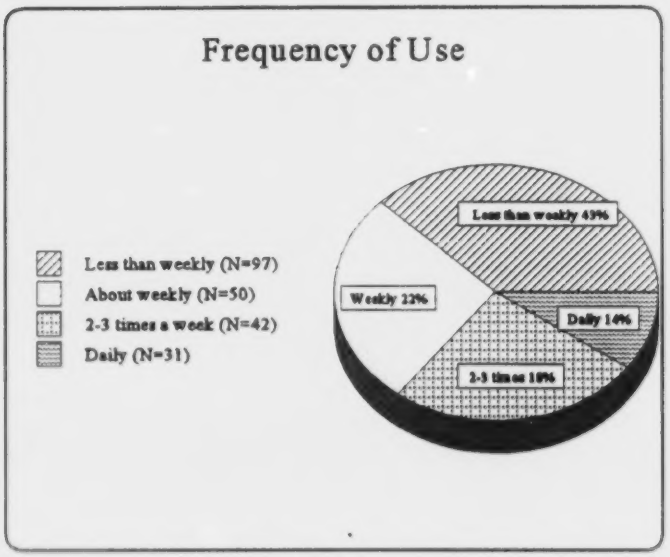
Frequency of Use

Figure 9 shows the frequency of use of the Schoolsnet with about 54 percent of the respondents weekly users and the rest less than weekly users. When asked if there was a usual day to login 31, or 14 percent, said yes while 186, representing 82 percent, said no. Each day shows a small number, between 5 and 10 percent as the "regulars" for that day with all others having no set day. Regarding what time was the usual for login, 109 people, 48 percent, replied that there was a regular time of day or night for login. The evening shows up as the most common regular time slot with 23 percent of those with regular times logging in at some stage during the evening. Only 11 percent regularly logged in during teaching times, with 10 percent before or after school, while 16 percent favoured mornings and 11 percents afternoons.

This situation indicates a continual use situation with relatively little user pattern over what day a login takes place but much more of a pattern for what time login occurs.

Figure 9

Frequency of Use



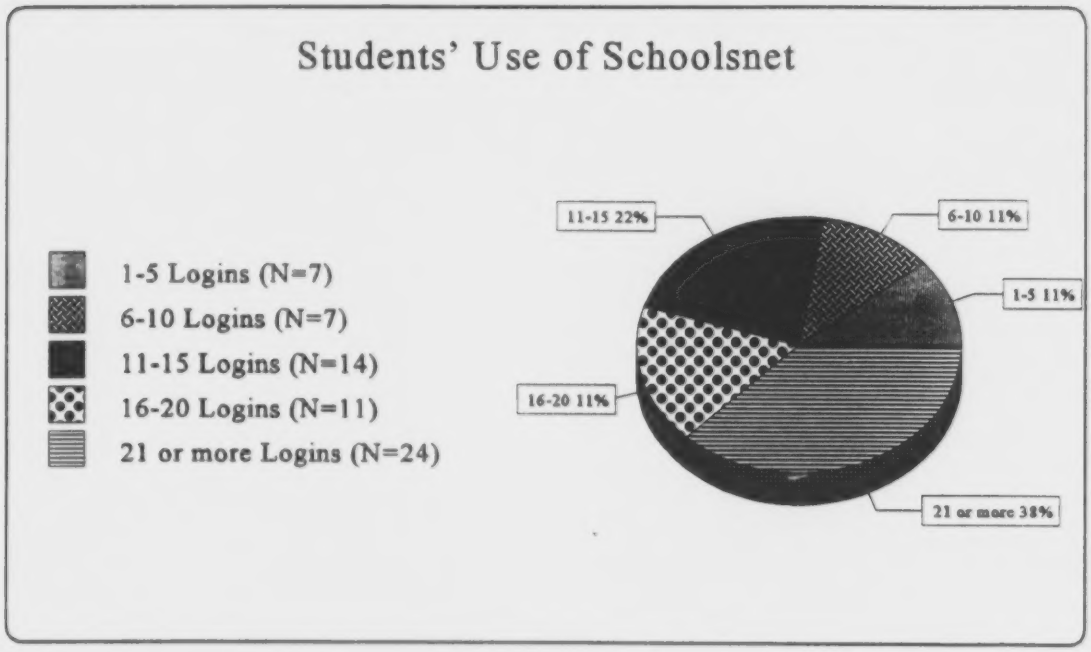
Note: 3 percent of questionnaires had no response to this question.

On the question of, was there an average length of time of use, 86 or 38 percent did have an average use duration, while 128, 56 percent, did not. The average times varied, with 7 percent of users in each of the ten, twenty and thirty minute login duration time groups. Few, 4 percent, averaged more than an hour. With the majority not having an average logon time, combined with few users on a regular day to day basis, there is a random mix of users logged on at any one time.

Students were asked a variation on the frequency of usage question and answered by saying how many logins in total they had done. A picture of greater usage is evident among the students and this is reflected in most of their responses, specifically, an enthusiastic take up of the features the Schoolsnet offers. Figure 10 shows the amount of times the responding students had logged into Schoolsnet.

Figure 10

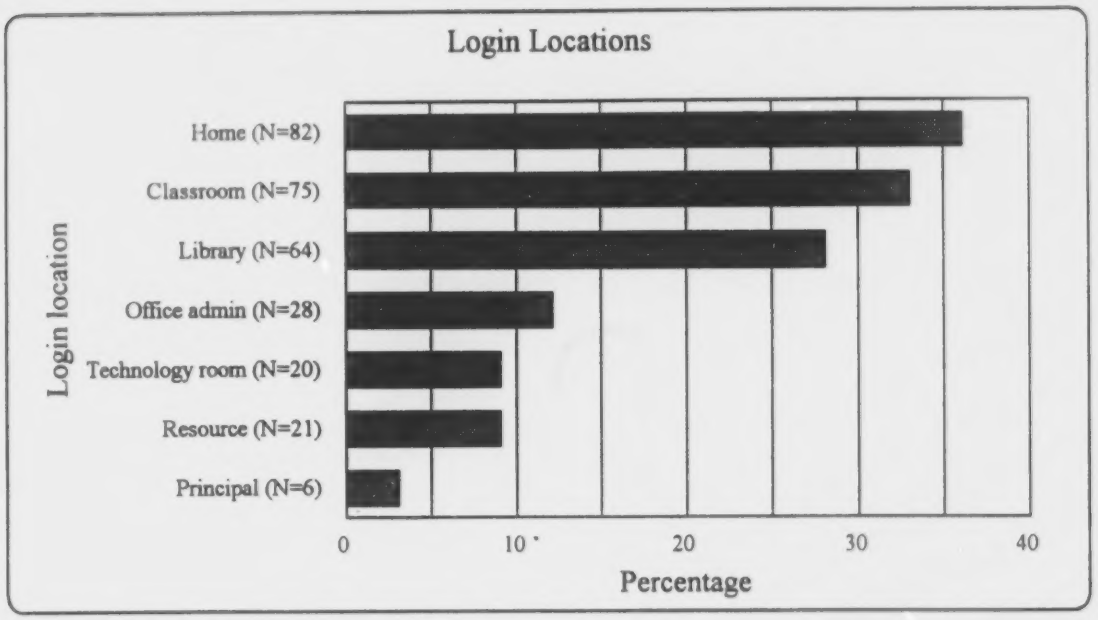
Students' Logins to Schoolsnet



Login Locations

When it comes to the location that the Schoolsnet is accessed from, the most common placement of the computer, for school staff use, is from home and not the school. Admittedly, this is only by a narrow margin over the classroom and library. However the high percentage of logins from the home ties in with the evening being the most common login time among those with a regular pattern of use. The later section that deals with charges and the Schoolsnet will address, among other thing, the difference in costs among home and school use in the urban and rural environments. Figure 11 displays the locations where the respondents said they logged into the Schoolsnet.

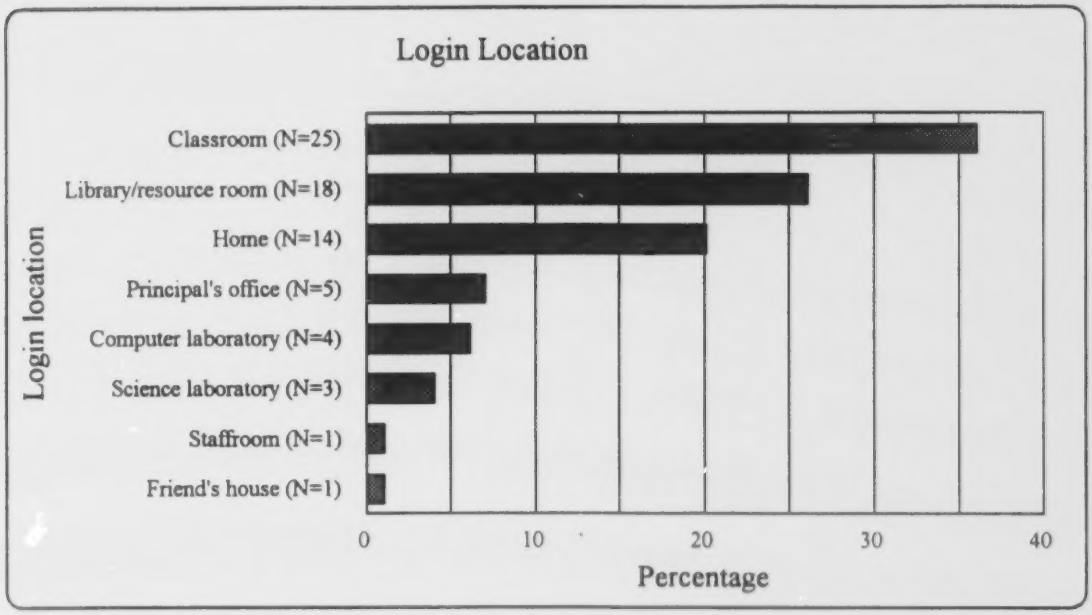
Figure 11
Login Locations



Responses to the *diary/log* differed: the top three locations remain as per the questionnaire data, although home use is less frequent than school use. Also featuring is the science or computer laboratory as a login site in a small number of cases. Other sites were the Principal's office, staffroom, administration area, technology room and resource room. It becomes abundantly clear that no standardised approach to placement of the access machine has been taken by those who use Schoolsnet. Figure 12 shows login locations from the diary/log.

Figure 12

Diary/log Login Locations

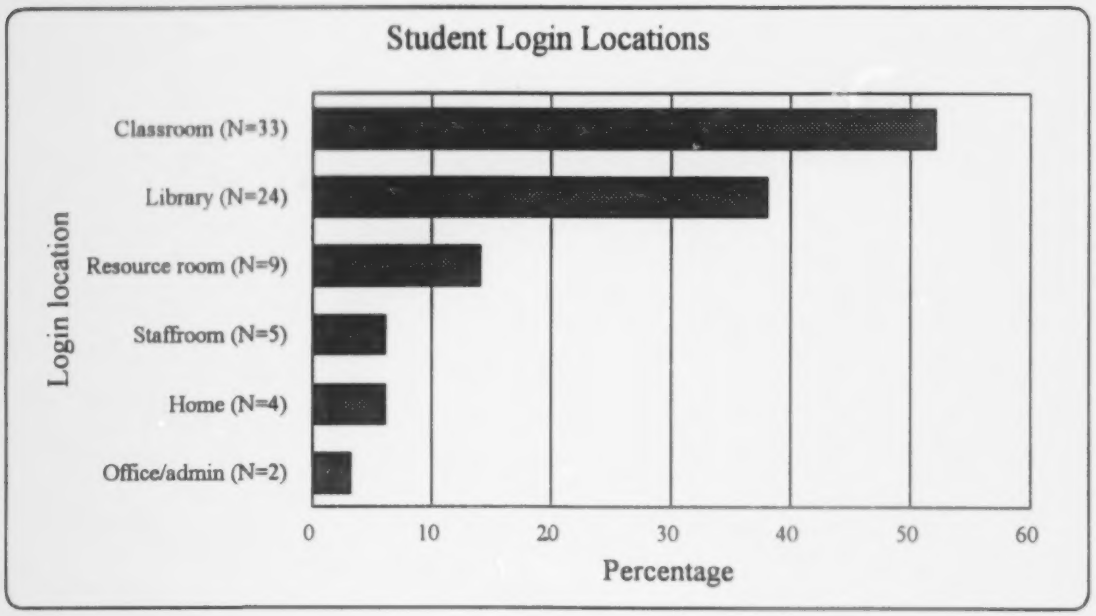


The visits indicated that it was unusual for more than two access machines to exist in one school. The experiences of each school can thus be expected to be different, as a library access is quite different to the science lab or classroom machine for access. Access by staff and students is either enhanced or restricted, and students will either have assistance or be on their own during use, according to where the access machine is placed and the terms relating to which people may be in that room.

Student login locations placed the access point to the Schoolsnet unambiguously in the school, see figure 13. The classroom and the library were the most likely sites, with the home and other school locations far less frequently used.

Figure 13

Student Login Locations

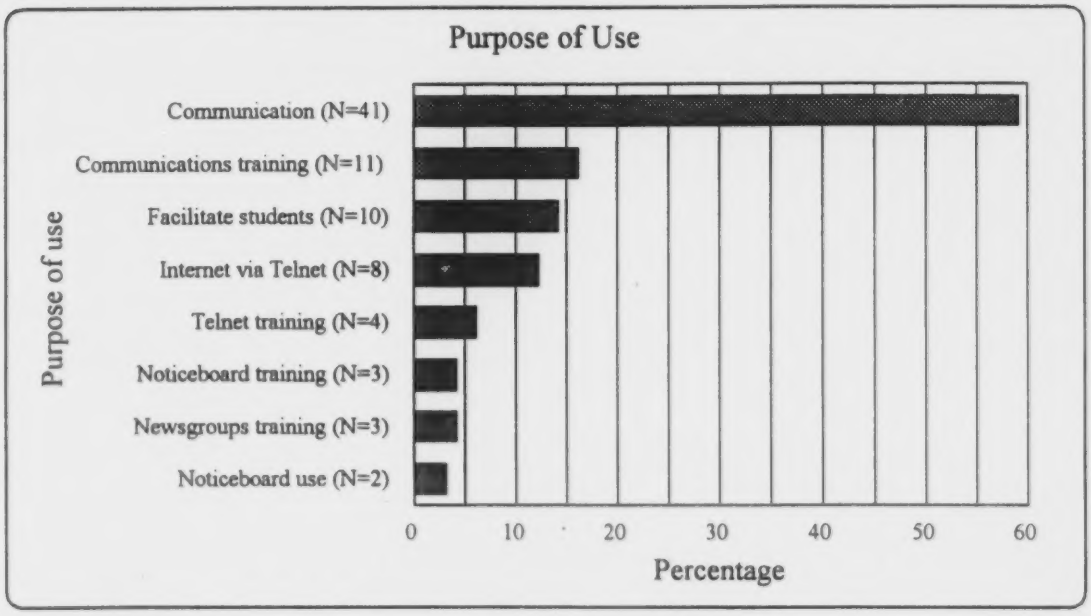


Purpose of Use

When respondents commented on what they used Schoolsnet for 184, 81 percent, replied it was used for communicating, 155, that is 68 percent, stated gaining information was the purpose of use. A small 6 percent replied that learning how the Schoolsnet worked was their main purpose at the moment. Figure 14 shows that communicating was the preeminent use during the week of the diary/log survey, with training the second most frequent purpose. Table B1–6 in the appendices shows the relative use of Schoolsnet for communicating and gaining information by the role of the respondents.

Figure 14

Purpose of Use from the Diary/log



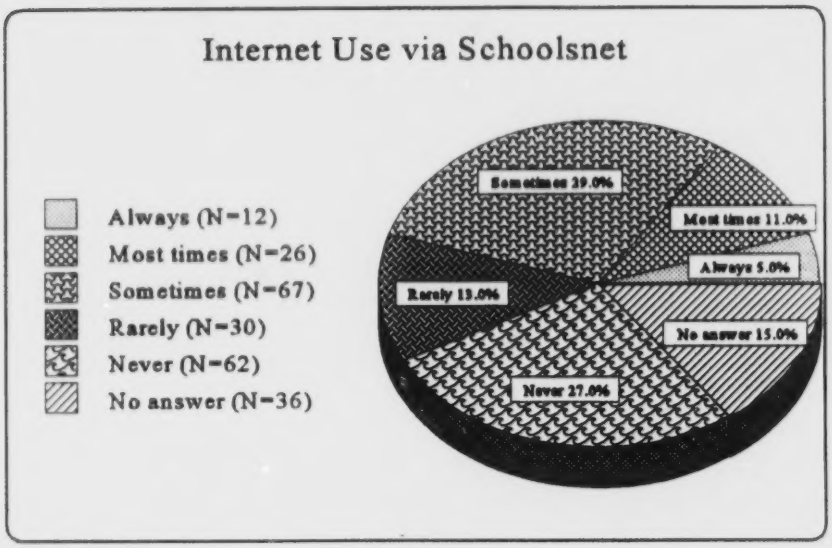
An overview of the information so far suggests that e-mail is the most significant part of the Schoolsnet in terms of what is used and why, with the information capability of the network of less current use among all Schoolsnet users.

Internet Usage

A matter of further interest regarding the pattern of use was, what was the level of logging into the Internet from the Schoolsnet. Figure 15 shows that a small percent of users regularly login to the Internet, using the Schoolsnet *Telnet* facility, and that less than a third never use this feature. During interviews several teachers did say that getting used to the Schoolsnet, especially if they were new to computer networks, was their first step. Only when confident with this step, and having then worked out how to integrate it into teaching, would the next step to the full Internet be explored.

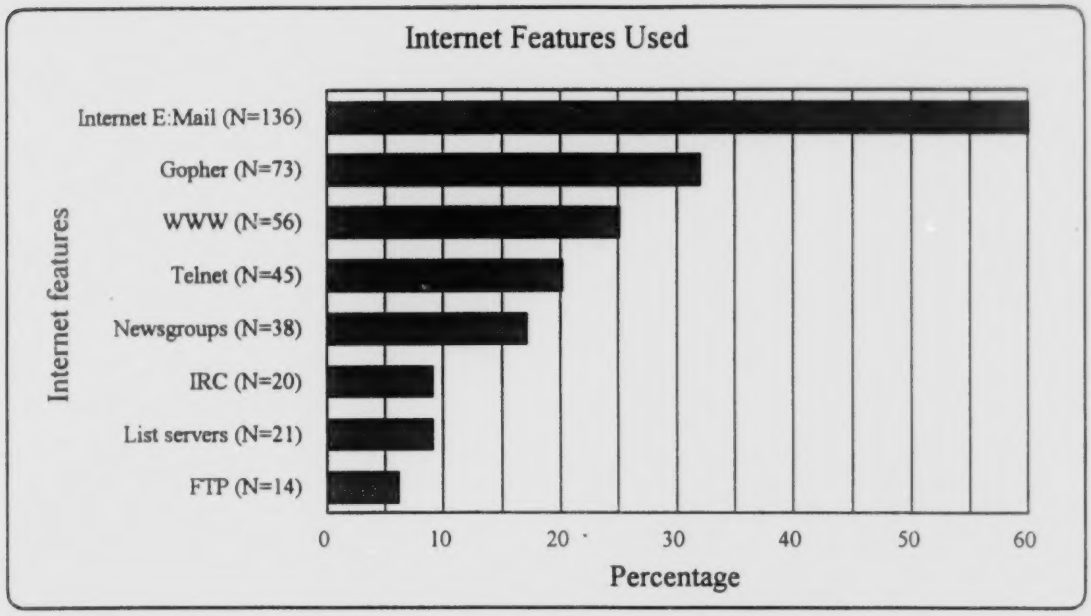
Figure 15

Internet Use via Schoolsnet



Of those that do use the Internet via Schoolsnet, the e-mail communication feature retains its dominant usage position. Following on from this, the Internet information search features that Schoolsnet can technically support, that is text based tools, comprise most of the other uses. Figure 16 illustrates what Internet features had been used by questionnaire respondents. When compared with how many people said they used the Internet and how often, the data confirms that Internet e-mail is the most likely feature to be used.

Figure 16
Internet Features Used



Note: World Wide Web (WWW) access from Schoolsnet is via the 'Lynx' text only WWW browser.

A final point that is related to usage of the Schoolsnet was a question that asked if other computer networks were used. Eighty three respondents did use other networks, making 36 percent of the total replies, and 136, or 60 percent, said they did not. The 'Internet Company of New Zealand (ICONZ) was used by 26 people, 11 percent, with 'K12' accessed by 21 or 9 percent, 'Compuserve', 'Actrix', 'PlaNet', 'New Zealand On Line' (NZOL), Fidonet, Bulletin board services and other Internet services providers were each used by only a dozen people or less. When students replied to this question, 76 percent did not use other networks, while 19 percent used graphical Internet browsing software such as "Netscape", other Internet e-mail packages, and "Apple E-World". This activity was carried out at home usually and, in at least one case, their parents work place.

The Three Stages of Use—"Exploration, Discovery, and Promotion"

One of the central findings of the phase one study of Schoolsnet was that three phases were identified as being the process through which each user went while learning about and then using the Schoolsnet. A central aim of the phase two study was to identify the influences on these three stages.

Exploration

The first steps a person goes through is to find out, or explore, their way around the Schoolsnet. One point deserves consideration before examining this process, and that is, what caused a person to look into Schoolsnet in the first place. Figure 17 shows the responses from the questionnaire. The interviews frequently supported the finding that a strong influence was technology training. Another factor that caused teachers to look at the Schoolsnet was the desire from boards of trustees and principals that electronic networks should be looked into to evaluate their educational worth for the school.

Figure 17

What Caused Your Interest in Schoolsnet

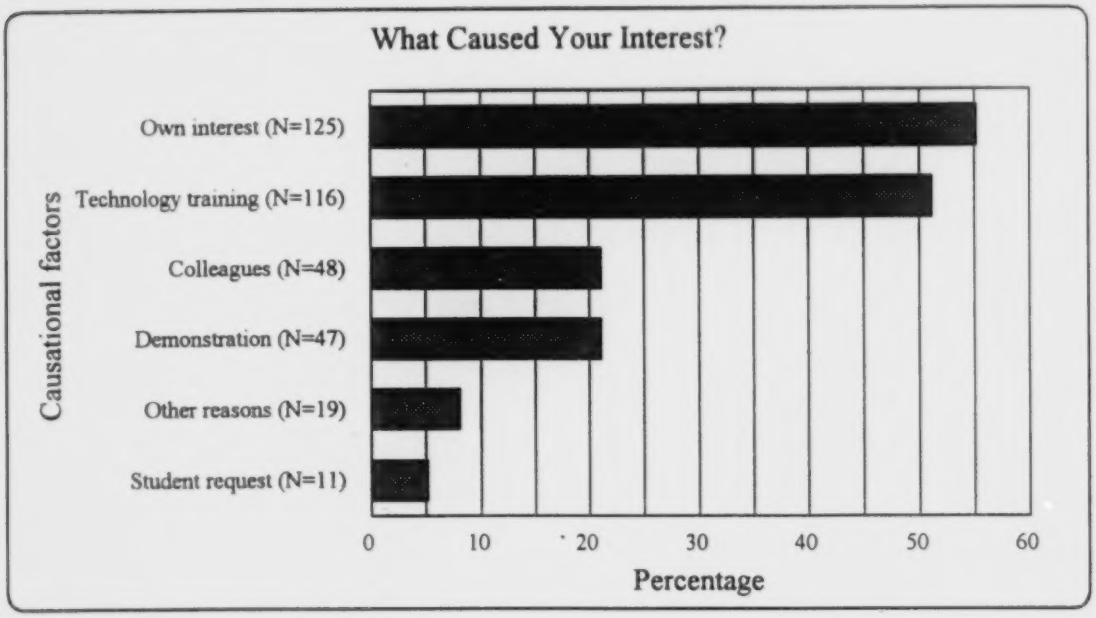


Table B2–4, in the appendices, shows the cause of interest by the role of respondent, demonstrating that teachers were especially prompted by technology training, and HODs along with assistant teachers were motivated more by their own interest.

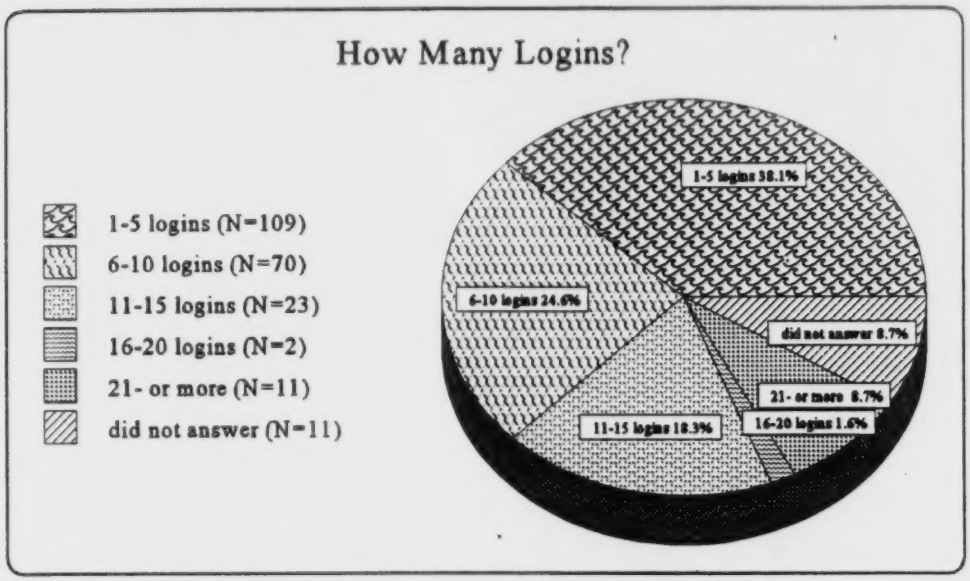
A question in the *users questionnaire* asked how familiar were the respondents with computer networks before beginning use of Schoolsnet. A 1–5 scale was used with 1 meaning no familiarity, 2 a small amount, 3 some familiarity, 4 quite familiar, and 5 very familiar. Only 5 percent were very familiar at that time, 11 percent considered themselves quite familiar, 17 percent had some familiarity, 22 percent only a bit, and the largest percentage of 45 percent had no familiarity with computer networks. Table B2–1 relates early familiarity to their school role.

When the above answer is compared to responses about current familiarity with computer networks, an increased pattern of familiarity appears. Those on scale 5 (very familiar) are now 14 percent, 24 percent are on 4, 33 percent are on 3, 25 percent are on 2, and on no familiarity a mere 4 percent. Table B2.2 shows these findings by role. The change has been marked . Those with higher levels of understanding computer networks have more than doubled in percentage terms and over 40 percent of respondents have moved on from the "no familiarity" position to being "somewhat" familiar with computer networks during the time they have been using Schoolsnet. It must be more than coincidental that the experience gained to bring users up to their current familiarity with Schoolsnet matches an increased general understanding of computer networks.

The next aspect of exploration studied was how long did this period last before the more useful—in terms of educational value—discovery phase occurred. Figure 18 shows how many logins were needed by users before they felt comfortable with logging in. Over a third did not take many occasions before getting into the network held no concerns. This allowed the next step of discovery to take place. The majority of responses indicated that a set amount of time, say that which allows for a dozen or more logins for familiarisation, is sufficient. A small percentage, 10 percent, indicated that at least double that number of logins was needed before a level of comfort in use was achieved.

Figure 18

How Many Logins Before You Felt Comfortable with Logging In?



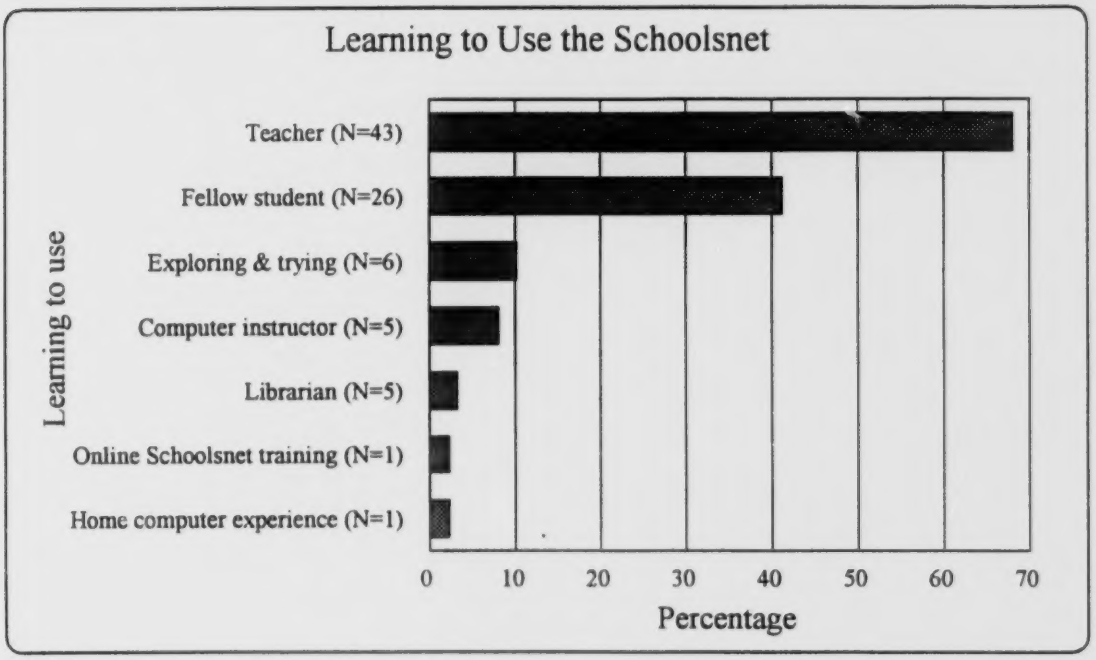
For students, a different approach was tken, and they were directly asked, "How did you learn to use the Schoolsnet?" As might be expected, a teacher's guidance figured most prominently. However, the second most significant influence on a student learning the Schoolsnet, namely the help of a fellow student, is notable. The influence of students on how Schoolsnet operates in a school will appear again in this report, as they influence promotion and expansion of the Schoolsnet in a school.

In the classroom environment this "fellow student" help in learning ablout Schoolsnet becomes an instance of students and teachers having a partnership for advancing the use of the Schoolsnet. This in turn contributes to these schools making progress in integrating Schoolsnet into the curriculum.

Figure 19 shows the responses from students of the factors that helped them learn how to use the Schoolsnet.

Figure 19

What Helped Students Learn the Schoolsnet?



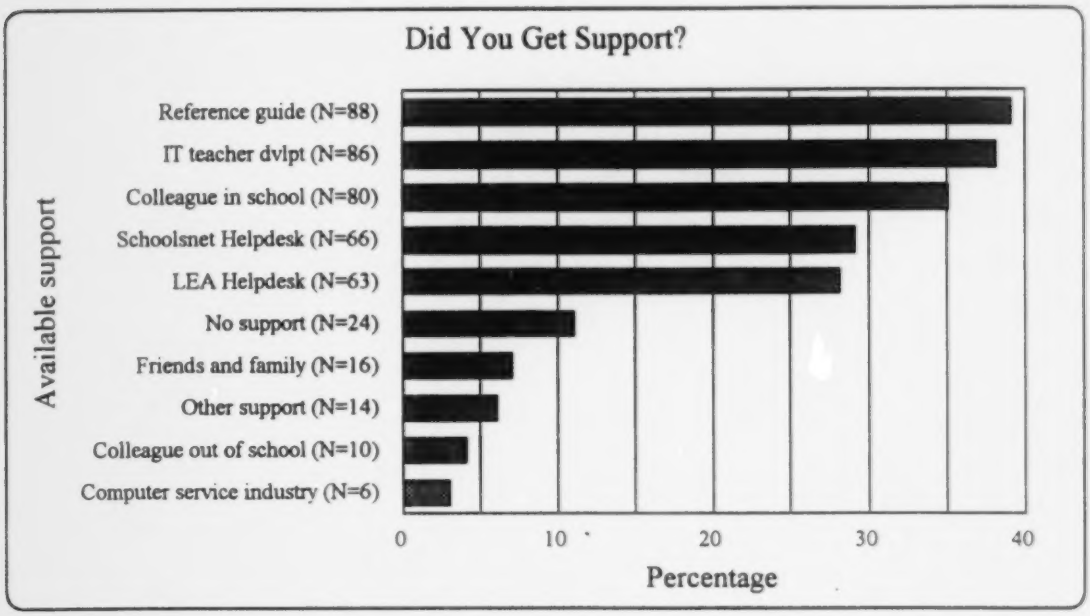
Discovery

The second step is discovery, for once exploration is under way, problems or barriers to use may appear. In answering a question on whether or not there were difficulties in finding their way around the Schoolsnet, 116, or 51 percent said 'yes' and 94, or 41 percent said 'no'. Of those that had difficulties, the most frequent was a difficulty with the software and commands needed, such as the changing protocols for 'tab' and 'enter'. For this group of 78 (34 percent), of the respondents, Schoolsnet was frustrating and not easy to learn. Other difficulties were mentioned, each by about 5 percent or less of respondents. These included; infrequent usage meaning a good understanding could not evolve, a feeling of still not knowing how to operate some features, the slowness of the system, a wish for integrated Internet and Schoolsnet training, and some hardware difficulties, such as getting the modem working. Sometimes limited access to the login location was mentioned as a hindrance.

A means to overcome these barriers is to support the Schoolsnet user. Figure 20 illustrates the answers to the question about what support a user had while exploring the Schoolsnet. A diversity of support was evident with no single measure reported as helping over 40 percent of the school staff surveyed. The significance of both information technology training, and help from a colleague in the school, is readily apparent. The contribution of both 'help desks' is also evident. Table B2–3 displays the questionnaire results as to support used by each sub-group in the school.

Figure 20

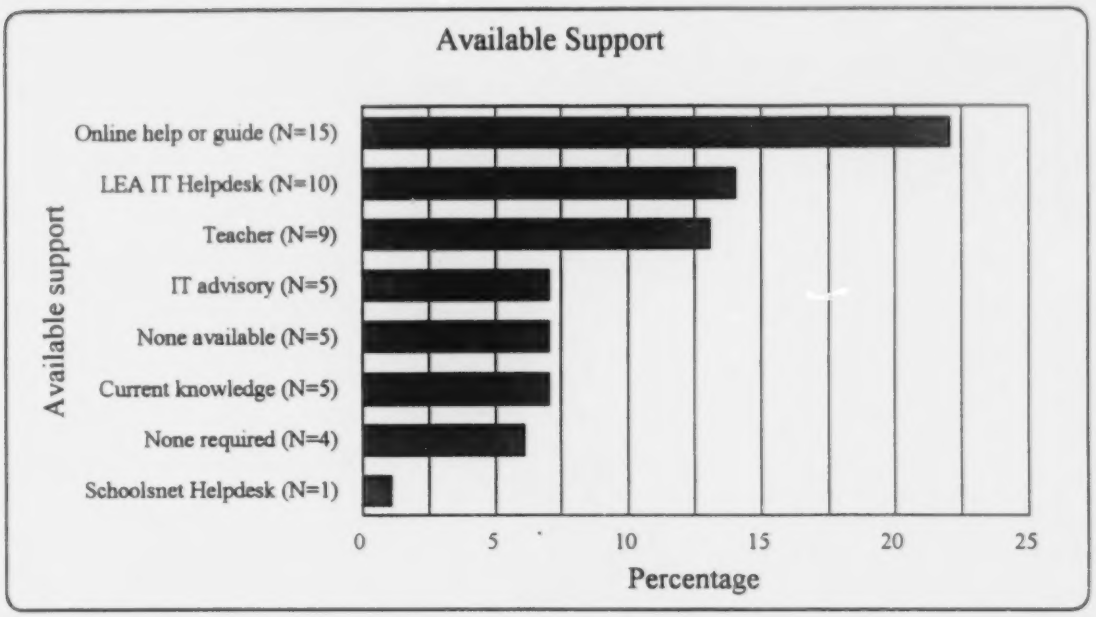
Did You Get Support When Exploring the Schoolsnet?



A slightly different response came from the *diary/log*, (*see* figure 21), with the Learning Enhancements Association (LEA) Helpdesk being of significantly higher use than the Schoolsnet Helpdesk. However, a fellow teacher as a source of support again shows up as significant. Over all a clear image of what support is felt by participants to be available is presented.

Figure 21

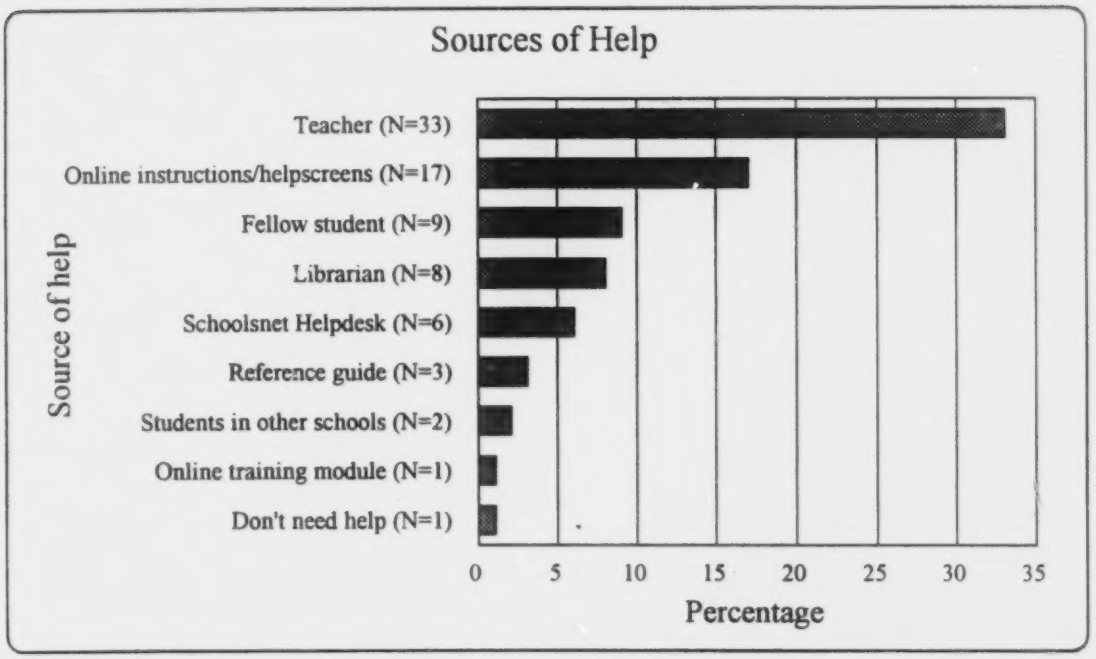
Support Available During Use of the Schoolsnet



Students were also asked where did they go to get help while logged onto Schoolsnet. Figure 22 shows the sources of help. As in the "how did a student learn about the Schoolsnet" question, the teacher was the first source of help, with further assistance coming from the Reference guide and online help. Fellow students showed up again as a factor in furthering Schoolsnet use.

Figure 22

Sources of Help for Student Users of Schoolsnet



A further analysis was done by relating respondents' current familiarity with Schoolsnet to the support measures to gain an understanding of what support went with gaining familiarity with Schoolsnet. Table B2–5 illustrates this cross referencing of answers. Of the small percentage, 6 percent, who said they had no current familiarity with the Schoolsnet, 2 percent of them had looked at the guide , or had received a colleague's help, and none of the other support measures had been taken up. The "Schools Network Pilot reference guide"' was used by an ever greater percentage of respondents as their level of familiarity rose. In ranks 4 and 5 over 50 percent of users found this a useful support. Regarding the two help desks, those respondents with the higher levels of knowledge, used the Schoolsnet Helpdesk more than the LEA Helpdesk, while those in the lower ranks, 2 and 3, used the LEA Helpdesk more than the Schoolsnet Helpdesk. This indicates that for a higher level of comprehension of the Schoolsnet, the dedicated Helpdesk is more useful whereas the LEA Helpdesk, which has a wider brief than one particular network, may be suitable at the exploration level of use.

Promotion

The final stage in usage of the Schoolsnet is the promotion of it. Figure 23 details how the Schoolsnet is promoted and concludes that a one to one "buddy type" training system was the most popular method.

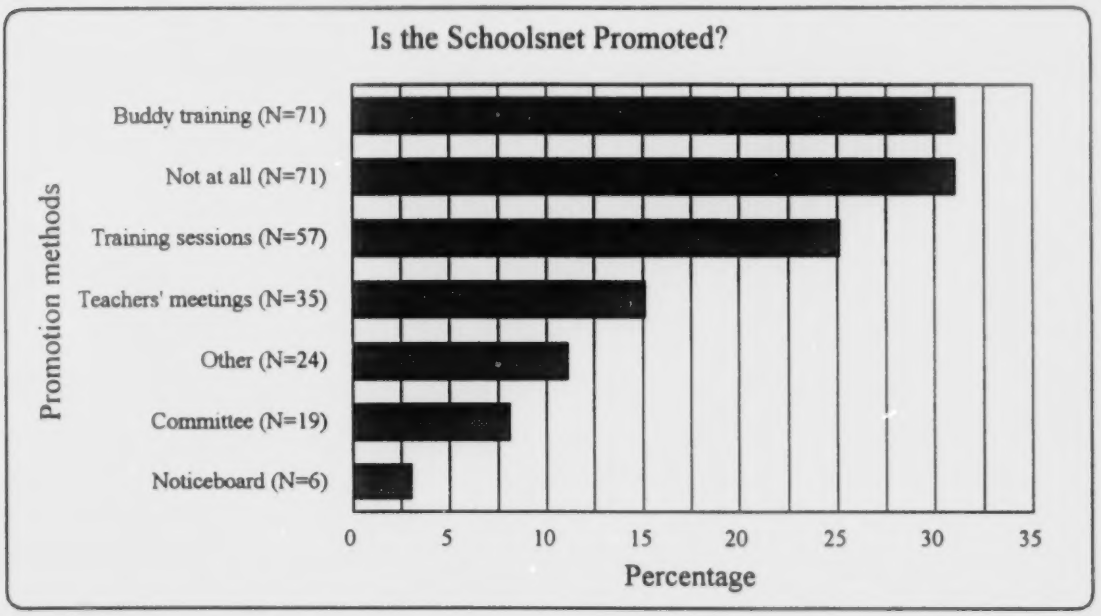
The significance of buddy training can be gauged by cross referencing the promotion methods with the question, "Would you use the Schoolsnet to assist with teaching in preference to another network?" The response to the above question was 19 percent would, 22 percent would not, 44 percent were unsure, and 8 percent said the question was not applicable to them. When the results of the first three groups, (those who would use the Schoolsnet, those unsure, and those who not use it in preference), are related to what promotion methods are used, the importance of one to one training was confirmed.

Over half, 51 percent of those who said yes to further usage of Schoolsnet had benefited from buddy training, only 24 percent of those who had had buddy training said no to Schoolsnet as a preference. The group that was unsure had a 33 percent usage of buddy training.

When promotion methods are compared to the scale of familiarity, those who felt very familiar were most likely to promote the Schoolsnet via "buddy training". Other training, including courses, were the second most frequent method.

Figure 23

Is the Schoolsnet Promoted?



Concern was expressed in the questionnaires about the process of exploring, discovering and promoting the Schoolsnet in terms of how it fits into a teacher's available time. Some specific comments were:

> The staff are interested, but it is a non-essential option in a task overloaded job. Commitment comes with direct Ministry training like (that provided by) LEA.

> Schoolsnet is promoted in the School through training sessions but not followed up that well. Teachers are motivated but the reality of including (the Schoolsnet) into the programme seems difficult to contemplate.

One description of the "buddy training" system shows how effective it can be in overcoming at least some of the concerns in the earlier comments:

> Promotion is by teaching the (staff) how to use it...the learner is talked through the session at their "pace, place, and time", questions are then asked as reinforcement and clarification of the learning experience.

In several schools visited, students and not staff, had the role of trainer. This was in both primary and secondary schools. Such an arrangement is more conducive to one to one training, for student or adult learning, as it increases substantially the potential number of trainers available in a school.

The Schoolsnet's Contribution to the Learning Process

Teaching Objectives with the Schoolsnet

To establish how Schoolsnet's contributes to the learning process, teachers were asked if they had any personal teaching objectives involving the Schoolsnet. Just under half of the respondents, 96 or 42 percent said that they did have teaching objectives and a slightly higher number, 108 or 47 percent did not.

The most frequently mentioned objective, 47 responses or 21 percent, was to enable communication between students and others around the country and overseas, via "keypals". The objectives here were to help teach communication, language and social skills, provide a purpose for writing, and allow students to share information and activities in joint classroom projects.

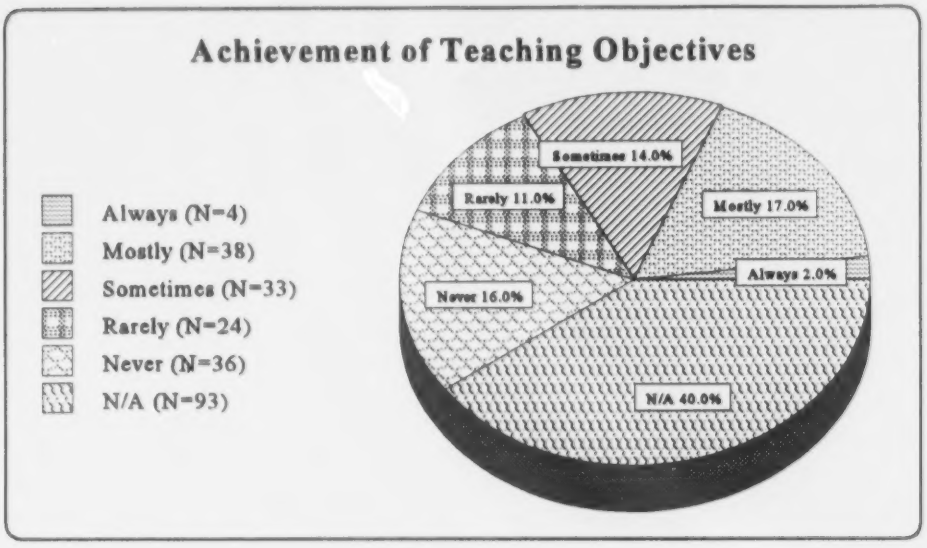
The second most popular objective, 31 or 14 percent, was to include Schoolsnet as part of information technology (IT) training that would help students become familiar with IT as both an aspect of the curriculum and as an aide in learning about other curriculum areas. Of particular note was Schoolsnet's usefulness in studying computers, e-mail, remote information sets or databases, and the Internet.

The next objective was information finding: 27 respondents or 12 percent, encouraged students and other staff to develop information searching skills and then find information for use in the classroom. Several other objectives were mentioned by 7 percent or less of respondents and included; finding out what Schoolsnet had to offer and becoming competent in its use; obtaining and sharing classroom teaching ideas, curriculum material or resources and lesson plans; and helping to achieve the LEA IT contract objectives which include using information technology to gather, manipulate, publish and communicate information in an educational context.

Figure 24 displays how often teaching objectives are achieved using a 5 category scale. It shows that only a minority of teachers are meeting, with any degree of regularity, their teaching objectives with the Schoolsnet.

Figure 24

How Often Do You Achieve Your Teaching Objectives with the Schoolsnet



Reasons offered as to why the objectives were not being met include; still being in the **exploration** phase of developing objectives or becoming familiar with Schoolsnet, or not having successfully implemented the objectives into the classroom yet. This reason applied to 9 percent of respondents. Restricted access to the network due to the limited number of sites available for logging in along with login delays hindered another 11 percent. It was felt by 3 percent that Schoolsnet was frustrating as it did not compare well to the use of a graphical computer network. A small group (3 percent) felt that lack of staff interest was not conducive to developing teaching objectives with Schoolsnet. The equipment needed for access was itself a further barrier for a few.

A final point regarding teaching objectives, is that the Schoolsnet is far more likely to be promoted in schools where there are teaching objectives for Schoolsnet. In a cyclical fashion, having objectives encourages promotion, which encourages developing more objectives

Training courses, which help define teaching objectives with the Schoolsnet, occurred for 34 percent of teachers in schools that promoted the network compared to 22 percent in schools that did not, "buddy training" was 45 percent over 24 percent. Other promotional factors however only showed a slightly greater use among teachers with Schoolsnet teaching objectives, these including a committee being responsible for implementing Schoolsnet 10 percent over 8 percent, teachers meetings 20 percent over 15 percent and other means 13 percent compared to 10 percent. There was no promotion in 37 percent of respondents schools when teachers had no objectives with Schoolsnet, however when objectives were held, the no promotion in schools situation dropped to 24 percent of respondents.

Schoolsnet Items Usefulness to Classroom Teaching

Of the various curriculum applications or activities that have been trialed on the Schoolsnet, some have proven reasonably beneficial yet the majority of users have not even tried them. This perhaps says that some sort of promotion effort targeted at them, perhaps via the most successful promotion techniques mentioned earlier, would have the benefit of bringing these items to the Schoolsnet users' attention

in such a fashion that allows a realistic chance of uptake of the item. What is evident, despite the low usage of some of the items, is that the potential of the Schoolsnet is rated very high, higher than current usage figures would suggest. In short, the opinion by users is that the potential is far greater than current actual behaviour suggests.

Table 2 illustrates the responses to the question that asked if the curriculum-based items on the Schoolsnet were used and how useful were they. A scale from 0–6 was used with 0 meaning the respondent had not used the item, 1 meaning not useful, 2 means marginally useful, 3 is moderately useful, 4 rates highly useful and 5 ranks very highly useful.

Table 2

Usefulness Rating of Schoolsnet Items for Inclusion in Teaching

Abbreviation	0		1		2		3		4		5		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
DL	154	82.8	0	0.0	3	1.6	7	3.8	12	6.5	10	5.4	186	100
TEP-IA	168	93.3	1	0.6	7	3.9	3	1.7	1	0.6	0	0.0	180	100
TEP-GM	168	93.9	1	0.6	5	2.8	4	2.2	1	0.6	0	0.0	179	100
TEP-CE	171	96.1	1	0.6	2	1.1	2	1.1	0	0.0	2	1.1	178	100
ISP	170	95.0	2	1.1	3	1.7	3	1.7	0	0.0	1	0.6	179	100
SC/WC	113	59.5	4	2.1	13	6.8	36	18.9	14	7.4	10	5.3	190	100
OC	134	72.0	2	1.1	9	4.8	21	11.3	15	8.1	5	2.7	186	100
SMC	168	92.8	1	0.6	4	2.2	5	2.8	2	1.1	1	0.6	181	100
BT*	159	85.9	2	1.1	8	4.3	11	5.9	2	1.1	3	1.6	185	100

Note: 0 = have not used, 1 = not useful, 2 = marginally useful, 3 = moderately useful, 4 = highly useful, 5 = very highly useful.

* DL—Schoolsnet Drivers License, TEP-IA—Trade Education Project, International Action, TEP-GM—Trade Education Project, Global Markets, TEP-CE—Trade Education Project, Competitive Edge, ISP—Indigenous Schools Project, SC/WC—Story Corner/Writing Corner, OC—Opinion Corner, SMC—Share Market Clash, BT—Brain Teaser.

The item with the highest rating for usage and value was the "story corner/writing corner" with 26 users, 11 percent, using this as a place where students may read other students' stories, and thus act as a motivator for reading, showing them what a variety of children think and presenting differing standards of writing. A further 22, or 10 percent, used "story corner/writing corner" to provide the ability for students to "publish" their writing for others to see, acting as a prompt and "authentic" reason to write. The communication dimension includes frequent feedback and encouragement for student writers efforts from readers or the Schoolsnet "story corner/writing corner" facilitator. Remarks from questionnaires and interviews related to this facilitation conveyed that students and teachers very much appreciated the participation of LEA in this area.

Other items, while not used by large numbers of users, did have recognition. The "Schoolsnet Drivers License" was seen as a logical developer of skills, a good introduction, and a motivator for use. Also, the certificate at the end of the course serves as a tangible objective. Comments outlining the other items' usefulness, for those that have used them, are below:

> Opinion corner . . . gave my oral language programme a boost with something new to discuss and get an opinion from the children. Also . . . Opinion corner

helps focus children's thoughts and shows that their ideas are valued, wanted and (can be) shared. This motivates them to write meaningful precise work that may have a further use such as forming the basis for class discussion and broadening creative thinking.

Trade education project—competitive edge . . . gave a focus and theme.

Trade education programme—global markets . . . was excellent [for my] form six economics topic—trade, it was obviously designed specifically with the syllabus objectives in mind.

Indigenous schools project . . . it was great to see what others do.

Brawny brainteasers . . . good introduction to the network and provides thinking strategies, it is most suited to the 5–7 year olds in my class.

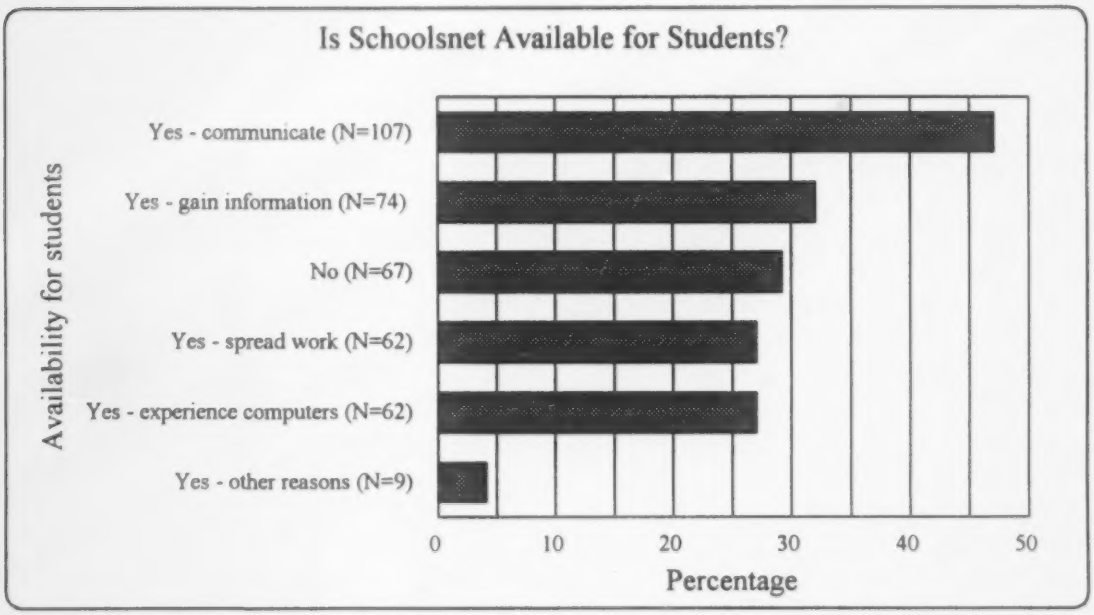
Share market clash . . . is useful for mathematics and statistics learning.

Schoolsnet's Contribution to Students' Education

The questions relating directly to how the Schoolsnet assisted students began with "Was the Schoolsnet made available to students?". Figure 25 shows that most respondents did in fact make Schoolsnet available for their students with only 29 percent or 67 teachers saying no to this question. The "spread work" category in the figure is a reference to widening the circle of readers for a student's writing through such measures as placing their work on the "story corner/writing corner" for others to read.

Figure 25

Is Schoolsnet Available for Students



A further question asked if the respondents actually organised students around computers to work with the Schoolsnet. When the "student use" categories from figure 25 are matched with the yes response from this question, a reinforcement of student usage behaviour may be seen with the percentages of how students use the Schoolsnet at predictably higher numbers yet with the same pattern. The purpose of use proportions remain roughly the same with communicating remaining as the prime use, rising from 47 percent to 85 percent of students using the Schoolsnet for this purpose. Information gathering rose from 32 percent to 55 percent, becoming familiar with the theory and practice of computers was up from 27 percent to 54 percent, and spreading work to a wider audience from 27 percent to 47 percent. Of note though, is the number of respondents who said that they did organize students work with the Schoolsnet, they were a distinct minority, 38 percent of respondents, while 50 percent said they did not organise this type of student work.

A small number of respondents, 11 percent, stated specific reasons for not having students use the Schoolsnet. These included being at an early stage of use and not having experienced a lot of what Schoolsnet has, or there being no established pattern of use, or there being inadequate computer facilities to allow student use. Alternatively no teacher was feeling comfortable enough with Schoolsnet to encourage or allow students to use it. Some teachers were in planning stages to introduce this to students in the near future.

A stronger trend occurred in responses to the question, "Do you feel that the Schoolsnet contributes to students education?" A majority of 139, 61 percent, said yes, only 13, or 6 percent, said no, and 56, or 25 percent, were unsure. The specific fashion in which this contribution was made can be summarised as:

- 20 percent answered that students could access a wide range of information and improve their research skills by searching for and selecting information through using the Schoolsnet and then the Internet search tools and methods.
- 19 percent considered Schoolsnet a suitable tool to help and encourage students learn about computer technology and networks by giving them experience in using it, and helping them realise its potential for data gathering and communicating.
- 18 percent thought of Schoolsnet as a medium and purpose for extending communications over a wider distance, via e-mail and terminal phone, to provide another form of communicating, all the while providing motivation for advancing those communication skills by writing (Story corner), reading, typing, spelling and other communicating and social skills.
- 16 percent felt that through the enhanced communication and information facilities, students gain a real life experience which greatly enhances their thinking and learning process as they link with peers in other countries and different cultures. This interaction with others "quite literally enlarges their awareness of the world".
- 8 percent replied that if carefully managed, thought out, with training provided on how to use it, given the right location and resources, and implemented with a purpose into the learning environment, Schoolsnet would help students learning.
- 7 percent were unsure saying they needed to gain more experience with it to ascertain its value to teaching and how to implement it into the classroom, how best to get the students capable of using it, and overall getting it usefully working. They also said that there may need to be a comparison with other networks to find the best network.
- 2 percent were unsure because they thought that it would only have educational benefits if introduced into the school properly in terms of who can use it, where can it be accessed from and what level of supervision is required.

- 1 percent responded that it would benefit those Schools who could not afford a commercial Internet service provider (ISP), with the "relatively" low cost allowing a network service and some access to the Internet.

Several individual comments stand out as insightful into what the Schoolsnet has, does not have and could be. These include:

> Knowledge of Internet via Schoolsnet is essential to development of up to date information on a number of subjects.
>
> Broadens their [the students] experience [and] makes them realise there are other children around this country learning similar techniques.
>
> Some of the benefits of an exchange programme without leaving home and without the cost.
>
> Yes [it does contribute] but it has already been superseded by another more user friendly and graphic orientated network.
>
> Yes, if it was more user friendly it would be better.
>
> I feel it has potential, especially if one has computer skills, and one is in an area where toll bills are not a [financial] problem.
>
> If children are able to quickly gain information cost effectively, then it will have a place. Costs restricts use because time spent finding your way is too expensive.
>
> Unsure, at present the cost of using the Schoolsnet does not make it a viable option for our students to use. We are therefore unable to make a judgement about it.
>
> Too few students have access at our place.

When the students themselves were asked, "Do you think that using Schoolsnet helps your learning in any way?", the positive response was overwhelming. A high 92 percent of students, that is 58 student replies, said, Yes, using Schoolsnet helps their learning. One student said, No it did not. When asked to explain, similar responses to those which came from their teachers as reasons for assisting students education came from the students. These included:

- 33 percent said that they could learn things by communicating with other people,
- 30 percent stated it increased the amount of information they had access to,
- 25 percent considered that it helped increase knowledge and confidence regarding computers and technology,
- 24 percent felt that it enlarged the school community enabling the meeting of new people and making new friends,
- 14 percent thought it assisted and encouraged reading, writing, spelling and typing,
- 13 percent responded saying it encouraged thinking, especially the "brawny brainteasers".

Schoolsnet in the Curriculum

A further central area of enquiry for this phase two evaluation was how the Schoolsnet fits into the curriculum and contributes to the essential learning skills and essential learning areas of the curriculum. Respondents to the questionnaire were again asked to use the 5 point rating scale to indicate usefulness, briefly summarised as 1 is not useful, 2 is marginally, 3 is moderately, 4 is highly, and 5 is very highly useful. The results relating to the essential skills of the curriculum are shown in tables 26 a and b. It was necessary, for making the line charts clear to read, to split the results into two figures. Figure 26a shows the responses regarding communication skills (comm), information skills (info), problem solving and decision making skills (prob), and self management and competitive skills (self). The percentages are based on the sum of all returns of the *users questionnaire*.

Figure 26a

Usefulness Rating of Schoolsnet's Contribution to Essential Skills—Chart 1

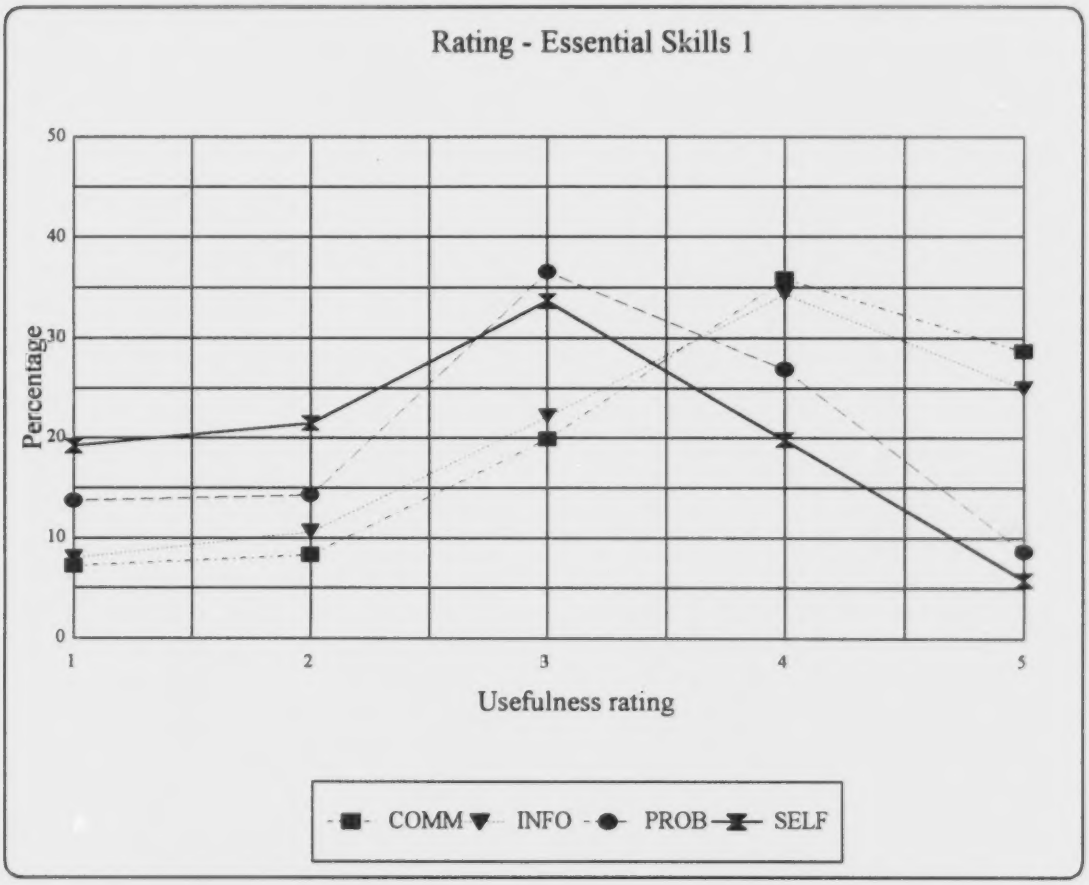
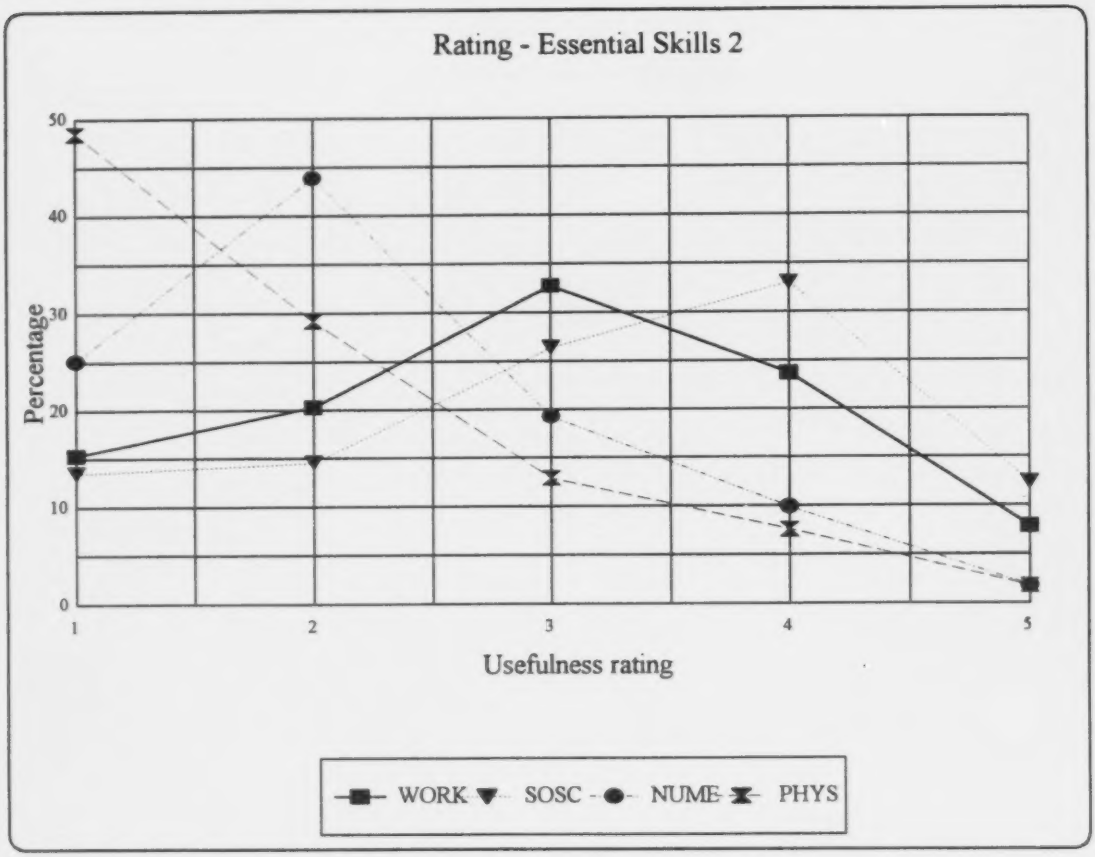


Figure 26b displays the results for work and study skills (work), social and co-operative skills (sosc), numeracy skills (nume), and physical skills (phys). Responses to the essential skills question by role in the school can be found in appendix table B3–1.

Figure 26b

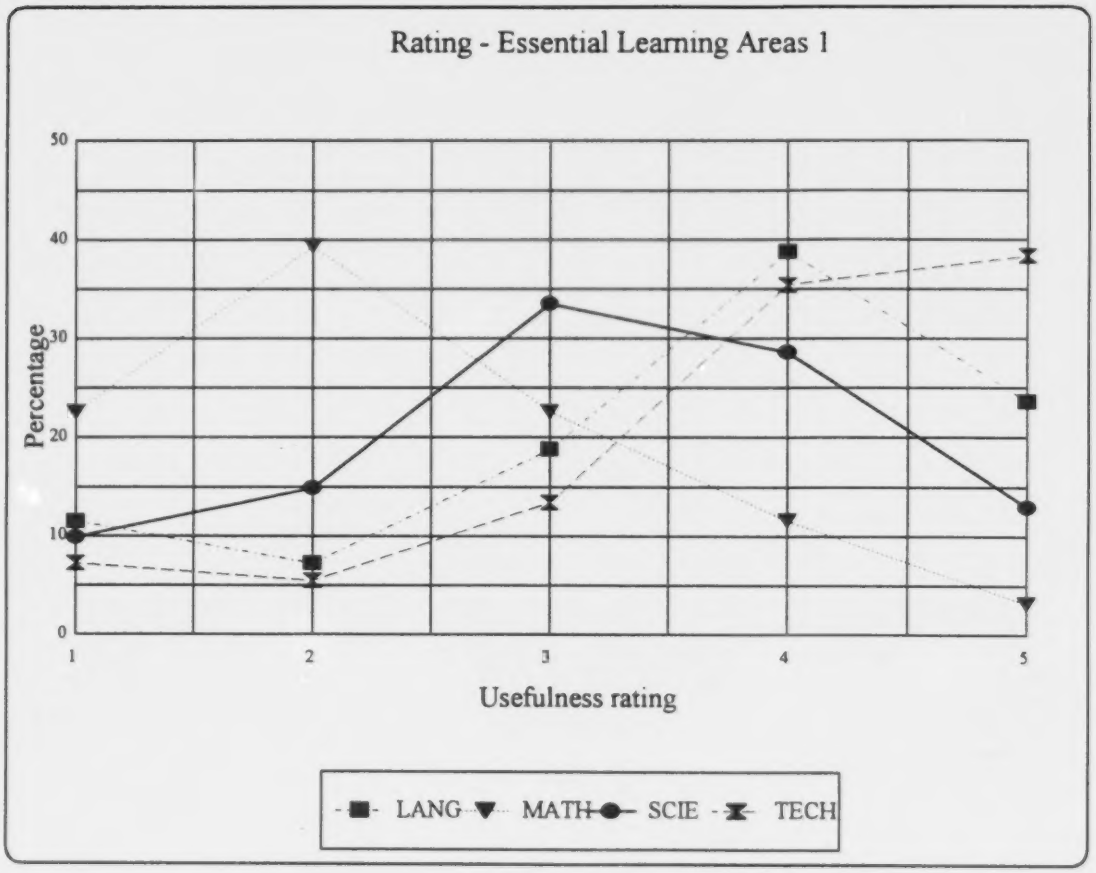
Usefulness Rating of Schoolsnet's Contribution to Essential Skills—Chart 2



The essential learning areas were also rated using the same scale, and these results also put into two figures to allow ease of readability. The key to the lines are language and languages (lang), mathematics (math), science and environment (scie), technology (tech), social science (soci), the arts (arts), physical development (phys), and personal development (pers).

Figure 27a

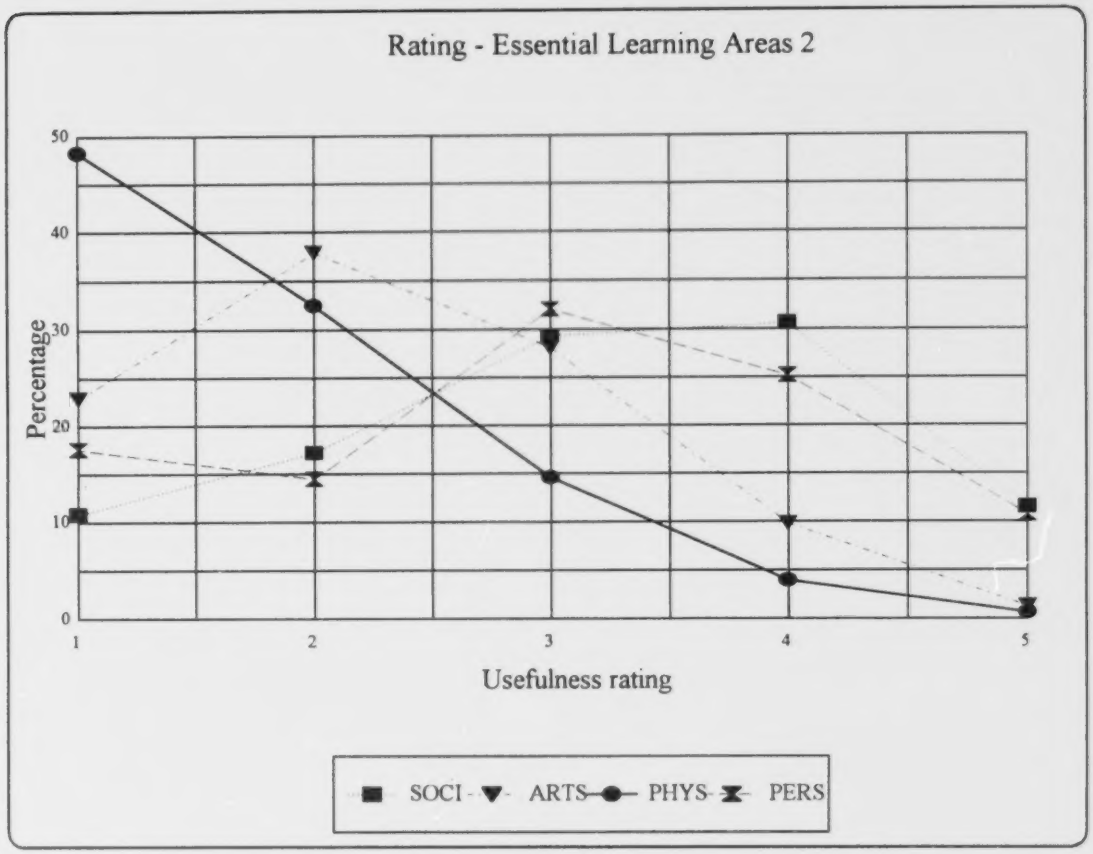
Usefulness Rating of Schoolsnet's Contribution to the Essential Learning Areas—Chart 1



Appendix table B3–2 has these responses by role of the respondent.

Figure 27b

Usefulness Rating of Schoolsnet's Contribution to the Essential Learning Areas—Chart 2



There were many remarks in the questionnaire about the Schoolsnet's usefulness and how to realise its full potential by overcoming current difficulties. These are indicative of them:

> Schoolsnet is very useful for contributing to the essential learning areas as it provides information, allows communication around the world, especially useful from an isolated schools point of view, acts as a motivator, expands students horizons, encourages thinking, and facilitates learning about information technology.
>
> It would be more useful if it was better set up in our school, ie there were enough access points, including computers, modems and phone lines, or other network technology.
>
> It would be more useful if it had more Internet facilities and kept up with contemporary advances in computer networking.
>
> The difficulty using Schoolsnet interferes with its potential usefulness.

the network easily, teaching objectives with the Schoolsnet, students' use of it, current facilities (items) tried, the Internet, and current familiarity of the respondents.

As a final point regarding how Schoolsnet can contribute to the learning process, a reference to the low frequency users will be made. Table appendix B5–1 shows the low users rating of Schoolsnet's usefulness regarding the essential learning skills and essential learning areas. Probably related to their low use is an almost universally lower rating of the contribution of Schoolsnet in every area of the curriculum.

The Interviews and Schoolsnet in the Curriculum

The interviews went into this aspect of Schoolsnet in greater detail, approaching the topic from two angles, firstly how the Schoolsnet was used in the context of teaching and, secondly, how they thought Schoolsnet could contribute to the provision of the curriculum in terms of essential skills and essential learning areas.

One teacher described how the classes using the Schoolsnet had changed after a while. In particular, the older students use of TP was evolving from the "silly stage" of chatter without much direction into questions and answers with a point. "Netiquette" and plain good manners and language were encouraged, with the promotion of the idea that once on the Schoolsnet a student is representing their school and should have pride in their behaviour and uphold the reputation of the school. This monitoring of the students use, by students, often occurred in an environment of 2 or 3 students logged on. The students were willing to reject any inappropriate or offensive material.

Exercises were used that involve communication with other schools and information exchange often with a pattern of, complete one exercise, send the results back to the other school, then work from the results, that are then sent back. This disciplines communication of information as well as having the benefit of the exercise. Learning is encouraged at a student's own pace. The curriculum areas this was mostly used in were English and Current Affairs.

One teacher stated, and others also considered, that current information about curriculum areas, especially English with its language emphasis and technology with its computer component, would be a good addition to Schoolsnet.

Another comment was that there was an opportunity for curriculum developers, ERO teams and teachers to engage in information sharing and discussion via Schoolsnet. Curriculum implementation information such as lesson plans, suggestions on implementation and assessment items[1] would also be welcome additions.

There was a reiteration of the questionnaire results that Schoolsnet can encourage students to write with the use of e-mail as a valued and unique means of communicating with someone they want to. TP also encourages the development of inter-personal skills as they interact with people they do not know.

The idea that there is a great potential for Schoolsnet to contribute to areas such as language, communication, information retrieval, extending knowledge about technology, and the technical skills in dealing with technology was repeated during the interviews. Underlying all this was the feeling that it was lessening the classroom's isolation.

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[1] NZCER is currently developing assessment resource banks for mathematics and science for years 7 and 9.

An all girls school had a slightly different perspective. There was no emphasis on the "computer" as such, all the attention of the students, as recognised by staff through discussion with the students, was on e-mail and Schoolsnet. Second language courses and geography exercises between schools allowed the differences in the other school's students' language ability and local knowledge to be utilised in their classroom work. The most immediate of the communication features, TP, was considered a supportive environment where students with questions, such as how to perform a function with the Schoolsnet, could ask other students for help.

A response from library staff in discussion was that the Schoolsnet, when placed in the library, increased the options for, and independence of, students getting information.

One participant detailed exactly why e-mail offered special significance for student communications in the school environment; saying "It was fresh, may be with with an unknown person, is a fairly immediate reply, it was genuine communication with another person, and held variety."

A cautionary note was expressed by one participant, that Schoolsnet was only one aspect of technology education, and indeed only one of a number of networks that could be used by schools. Its benefit to curriculum areas could be in delivering material but ultimately its use is in the hands of the teacher. Another school, just beginning use, said the more adventurous students were using it almost exclusively as they had control in the loosely regulated and narrowly understood environment.

In one school, the principal very clearly stated how the Schoolsnet, as it is, fits a curriculum and teaching practice objective of the school. That objective is giving the student a choice when it comes to a communication or information finding task. When communicating, is it face to face, phone, fax, paper mail or e-mail that may offer a "best" option in terms of time, cost, accuracy of information and need for it. To find information, a book, magazine, the library's other sources, or a computer database might be the "best" way. The teaching objective is to enable the students to make the best choice regarding these options according to their needs and resources. A computer network, such as Schoolsnet, is a part of this model.

Accordingly classroom exercises, or curriculum activities, are encouraged so that Schoolsnet becomes one normal workable option for the students, and staff. Two classes during the visit were doing "high use of the Schoolsnet" projects, such as contributing to an electronic discussion regularly, sharing news between schools in New Zealand and the USA, conducting a comparative river study with one school in the USA which involves collecting data from the field, preparing information from that, e-mailing it to the partner class, getting a return set of information for comparison, then conducting their analysis.

Problem solving using the tools at hand, collective and individual ability, and motivation with an interesting exercise underlies all this activity and relates to further areas of the curriculum. Moreover, oral language skills were addressed by exercises of taking material from "newsgroups" and presenting it to a class group, and written language abilities were exercised by writing to "key pals".

Mechanisms to help students negotiate the Schoolsnet to meet their objectives included, instruction notes on how to do things with the Schoolsnet surrounding the computer. Repetition and variation was used to maximise the chances that one version would supply an answer to a question. Practice was used to overcome unfamiliarity. There were two accounts in one school,so one class would e-mail the other class as a way of students becoming familiar with the network. E-mail to the next room or to the next continent has no real difference in operation for the message sender or receiver; yet being able to walk next door to see if it has arrived has an advantage for the young users' confidence and allows them to "see" the whole communication process.

At another school, the role of Schoolsnet in professional teacher development was raised as having real potential given its network linkage *capacity* to all teachers.

In summary, some of the responses above are given in the context of the one interview. However, many of the ideas were repeated in several interviews, especially classroom activities with the Schoolsnet, encouraging nettiquette during use, and the expected benefits to students in the areas of writing, communicating, and finding information.

Schoolsnet in the School, the Physical Modifications and Requirements

Most of the computers that allow access to the Schoolsnet in the school environment are in one of two places, firstly the classroom, and secondly the library or resource room. The science laboratory and principals office are the next most likely location for access within the school. Outside of school, logging in from a school staff member's home features as the main site of the computer used for accessing Schoolsnet.

The research showed that there had been few physical changes to the rooms where the Schoolsnet may be accessed from. The main action was to ensure a phone line went into a class room and that a phone jack for the modem was near the computer. Existing use of the computer for educational purposes is common. Schoolsnet use therefore required only that the communication means (modem and phone line) were connected and that a phone line to be wired through to the room if there was not one there already. In discussion with users, a dedicated line was seen as best so as not to interrupt other functions such as phones or faxes. Resources and funding issues surrounding this connectivity will be addressed later in the section dealing with charges as one issue that came up during the school visits was that the Schoolsnet use had greatly increased phone bills in some cases. In some instances a budget of what is an acceptable cost had been put in place; in others a decision was yet to be made.

The technical aspect of making phone, fax, and networks such as Schoolsnet, all "fit" into a school has sometimes brought setup difficulties and a cost for upgrading or increasing communication capacity.

One change was reported by a secondary school library that they had longer opening hours as the Schoolsnet had a core group of student users who were keen to increase their access. It brought more students into the library. In one primary school classroom however, there had been an "inclusive" approach rather than a "changing things" approach by bringing Schoolsnet activities into the room as "just another activity".

One aspect of room use that did arise in discussion was that, while supervision of what students did on Schoolsnet was not always seen as necessary, an adult nearby is useful for a variety of reasons, from offering assistance on use to ensuring unacceptable behaviour doesn't occur.

When the physical environment is considered, one central point arises: it is useful for teachers to be able to use the Schoolsnet and become familiar with it outside of the classroom. Teaching time is not really the time to try and find out how the system works. It is frustrating at best in the classroom to have a hold up due to not being able to get a function of the Schoolsnet "to work". When staff areas were connected, or access points made available for staff, trial-and-error learning took place. Support in the form of another staff member acting as a local "Helpdesk" or "buddy teacher" was valued. Teacher preparation areas were seen as a suitable place for the Schoolsnet access at school, preparing for later use of the Schoolsnet in the teaching areas.

Thus, the location of computers that allow access to the Schoolsnet should be in areas that reflect

the main activity already going on there. In the library all should be able to use it, in a classroom that class may use it, and in a staff room the teachers may use it for exploration and preparation. In most of these places one group has access, while others are excluded to a greater or lesser extent. A range of places is needed for each group to access Schoolsnet for their purpose.

The main concern regarding the technology for using the Schoolsnet reflected the concerns regarding information technology costs overall. From office administration systems, library electronic cataloguing, classroom teaching computers, laptops for teachers and portable computing capacity, networking within the school and networking outside of the school, the costs of all this is a concern. A central principle is to avoid redundancy, or "future proof", any technical and financial decisions as far as possible. Renting, leasing or selling back options with a supplier were being tried. While "better" machines were wanted for Schoolsnet use, it would be fair to say that better machines and more of them was a common need regarding IT for all school uses.

Changes From the Phase One Study

There was a slightly different emphasis in the second phase study, specifically to take four central questions and analyse them in depth, rather than a more general phase one study. This shift made a direct comparison between all aspects of the phase one and two studies impractical. However, there are important core issues where a comparison can be made and changes highlighted.

The most significant change appears to be in the stages of use pattern that was identified in the phase one study. Whereas then most teachers were going through the initial **exploration** phase, the results from the present study indicate that nearly 65 percent of Schoolsnet users rated themselves as fairly familiar to being very familiar. Now two-thirds of current users can be said to be in the **discovery** phase at least. Accompanying this has been a rise in the number of teachers with teaching objectives involving the Schoolsnet, from 35 percent to 42 percent of users. This reflects a gradual rise in integrating Schoolsnet into classroom practise and is an expected result given the increase in familiarity with the Schoolsnet by users.

One marked difference appeared when the support measures for learning how to use Schoolsnet was compared between the phase one and two studies. The use of the "Schools Network Pilot reference guide" to assist users has risen from being referred to by 5 percent of the users then to nearly 40 percent now. A smaller rise is evident with use of the Schoolsnet help desk, 10 percent more respondents in the current study requested assistance from this source. Increased use of these central Schoolsnet sources of help does appear to coincide with a greater awareness among Schoolsnet users of what it offers. The growth in use of support services has coincided with questions from users about how to make the "unrealised capacity" work in the classroom.

It is apparent, although student use was not measured in great detail in the phase one study, that student usage of the Schoolsnet is rising. Students logins indicated a growing usage pattern. In schools where student use was observed, it would have to be described as "enthusiastic", and a growing number of teaching objectives with Schoolsnet involve students. Students feature in promotion, independent use by themselves or in small groups, and in classroom activities moderated by the teacher and whoever else is involved in the particular activity or project. In some schools students may even be the predominant and most experienced users, in a position to act as trainers for other students and staff alike.

One final point of comparison is that an additional 10 percent of Schoolsnet users had tried other networks between the times of the phase one and two studies. The interviews confirmed that

customised alternative networks and competition from network providers for customers are increasing. The Schoolsnet is being compared with other, not specifically education, network providers. Choices regarding functionality, content and cost will be made by schools and teachers. An evolution of a consumers' choice model, of getting what meets the needs with the resources available, is emerging.

Indicators of the Future

The *users questionnaire* asked about what curriculum material, computer features, and costs of the network would be wanted and appropriate for the future.

Firstly, there was a question about "was there any curricula material wanted in the future". Twenty-nine respondents, or 13 percent, said they would like to see more curriculum material; 21 replies, 9 percent said no; 136, or 60 percent, were unsure of what curriculum material they wanted, if indeed they wanted any more at all. Of those who did want curriculum material, the listing below describes what was mentioned:

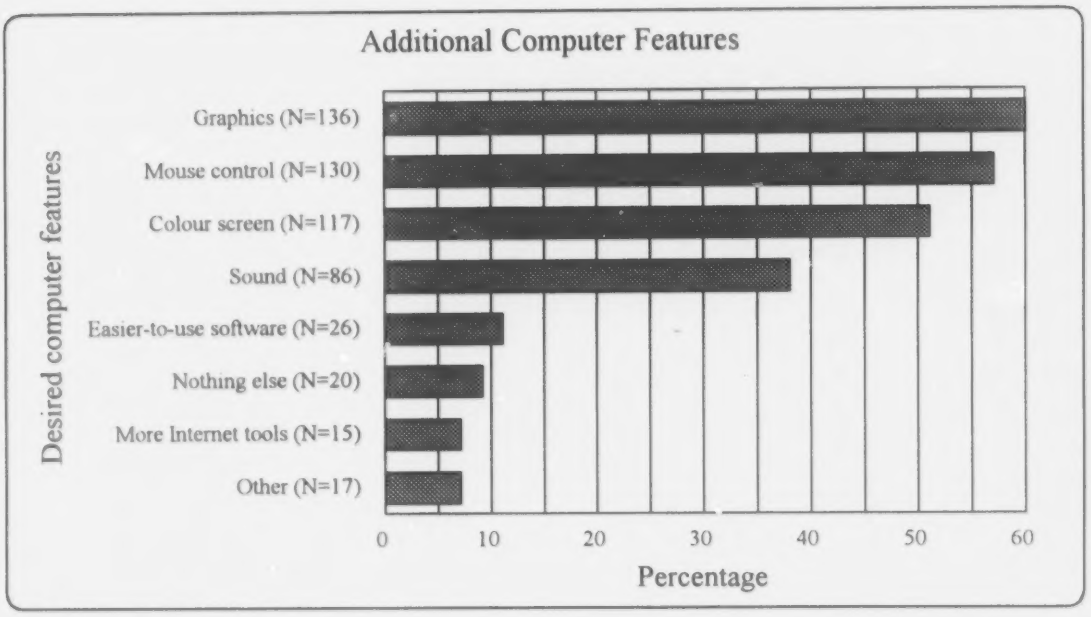
- Teachers' lesson material, including planning notes, directions to useful material on the Schoolsnet, and useful contacts. (18 replies, 8 percent)
- Material that can be used in teaching, including course information, lesson resources, project ideas, subject material for all areas of the curriculum and relevant news, current affairs, and sports information. (14, 6 percent)
- Topic specific material, such as problems and exercises in mathematics, technology, science, and English language. (9, 4 percent)
- Internet access, via a graphical user interface (GUI), to curriculum relevant material. (7, 3 percent)
- Up to date NZQA material such as unit standards, and tests. (4, 2 percent)

An uncertainty still surrounds what curriculum material is wanted for the future in most users' minds. However the few who have indicated what is wanted may be pointing the way ahead in this area.

The second area of enquiry into future needs was about additional computer features, or capacity of Schoolsnet that is wanted. Figure 28 shows the order of the most requested capabilities.

Figure 28

Additional Computer Features Desired for Schoolsnet



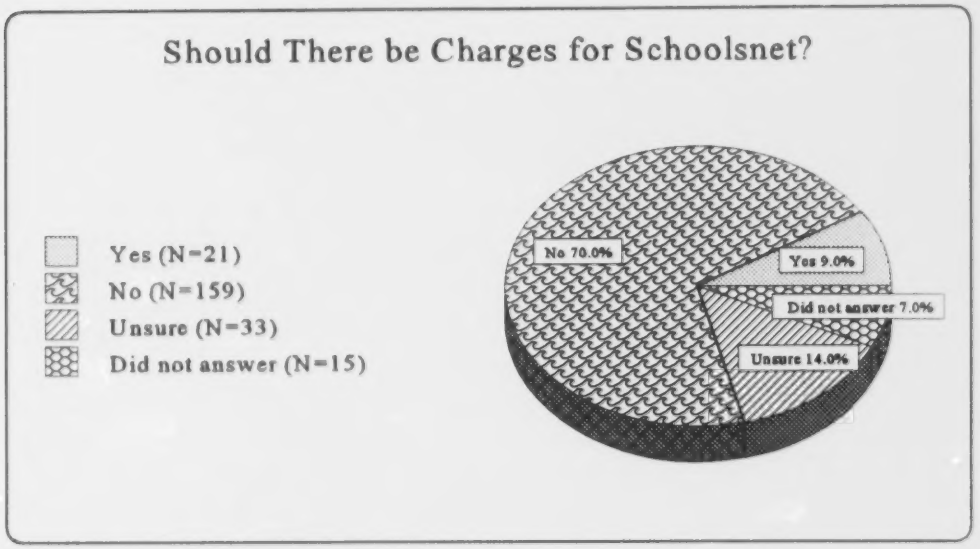
It seems that the main message to be taken from these results is that Schoolsnet users want the computer software and operation to look like the other ones that run at School. As "windows" or "macs" have graphics, colour, and a mouse or pointer control, and these machines have a "similar" look, and are widespread, what is wanted is a network system that looks and works like these computers in the school. In short, the Schoolsnet adopting the "standard" computing set up would reduce the need for training, speed up **exploration** and **discovery** and aid **promotion** of the Schoolsnet. Other suggestions included speeding up the system, improving the messaging facilities with an "offline" mail reader and word processor, and establishing links to educational networks in other countries.

Charges and the Schoolsnet

The issue of charges for Schoolsnet has proven to be a controversial one with opinion on the one hand that Schoolsnet should be provided to schools at no charge and on the other hand a recognition and willingness by schools to pay for a computer network so long as it meets their requirements. Figure 29 shows the results from the *users questionnaire* with a large majority favouring "no charges" for Schoolsnet.

Figure 29

Should There be Charges for Schoolsnet?



Some specific reasons stated by those in the majority include:

- Schoolsnet is already expensive enough with the telephone costs, we could not afford more expense. Therefore, charges would reduce usage and slow development of Schoolsnet in this school. (27 responses indicating this or, 12 percent)
- The information and communication network is an "essential service"; it should be part of curriculum provision, and government funded so as to be made available to all students, staff and schools. This will ensure that poorer areas do not miss out and there is no restrictive pressure on users caused by financial restraint that would undermine the achievement of the educational goals of the Schoolsnet. (26, 11 percent)
- High communication costs, especially for rural users, have already reduced or stopped use altogether. (25, 11 percent)
- Technology and computer equipment is already expensive enough for schools to buy and the Ministry of Education should pay for the Schoolsnet component of IT, as a valuable learning tool. (21, 9 percent)
- Charging for the Schoolsnet would discourage using time on-line to explore, learn to use, and try things out. The take up of Schoolsnet would be slowed within the school, with restricted use, and that would hinder the achieving of the educational goals of the Schoolsnet. (21, 9 percent)
- Charging for Schoolsnet would place it in direct competition with the commercial network providers. This may mean the best service for the price is sought , and school users of networks are split up among different services which, while not hindering e-mail, will diminish usage for "in system" features such as terminal phone and the noticeboards. (10, 4 percent)

A small number of users (6, 3 percent) expressed a directly opposing view. They felt concerned that without users paying for Schoolsnet it might not be used "properly"; charging will act as a "control" of usage.

Some saw a reason for charges, but questioned whether or not the schools budget would allow for it. Examples are:

> With added features an annual subscription would be appropriate and acceptable.
>
> Students and schools have to come to terms with paying for information.
>
> Should try to keep them low because of high associated costs.
>
> Can schools afford it?

The next question in the *users questionnaire* was "Would charges for the Schoolsnet change your usage of the network?" Again, the majority said that it would: 159 respondents, 70 percent, said that it would, 15 or 7 percent said it would not, and 36, or 16 percent were unsure. Of those people who opposed charges, a high 80 percent said that charges would change their use. The main reasons are given below.

- Use would decrease due to budget constraints, especially in low socio-economic areas, and locations with high rural toll charges. This would defeat some of the purposes and advantages of using the Schoolsnet. (55, 24 percent)
- Networks would be compared and chosen by service and price. Only if the Schoolsnet charges were accompanied by an increase of service, such as a graphical interface to the Internet, would selection of it be favoured. Its New Zealand educational emphasis does give it an edge in the marketplace though. (23, 10 percent)
- Would cease using Schoolsnet if charges were introduced and either seek another "free-net" that does not have charges for use, or go to an Internet service provider that will provide full, up-to-date facilities. (19, 8 percent)
- Use would decrease, as there is already a need to reduce communications costs before the Schoolsnet would be affordable for us. (13, 6 percent)
- Use would decrease by no longer allowing unsupervised or exploratory access. Expansion of use, such as making it available on the local school area network, would be curtailed. (10, 4 percent)

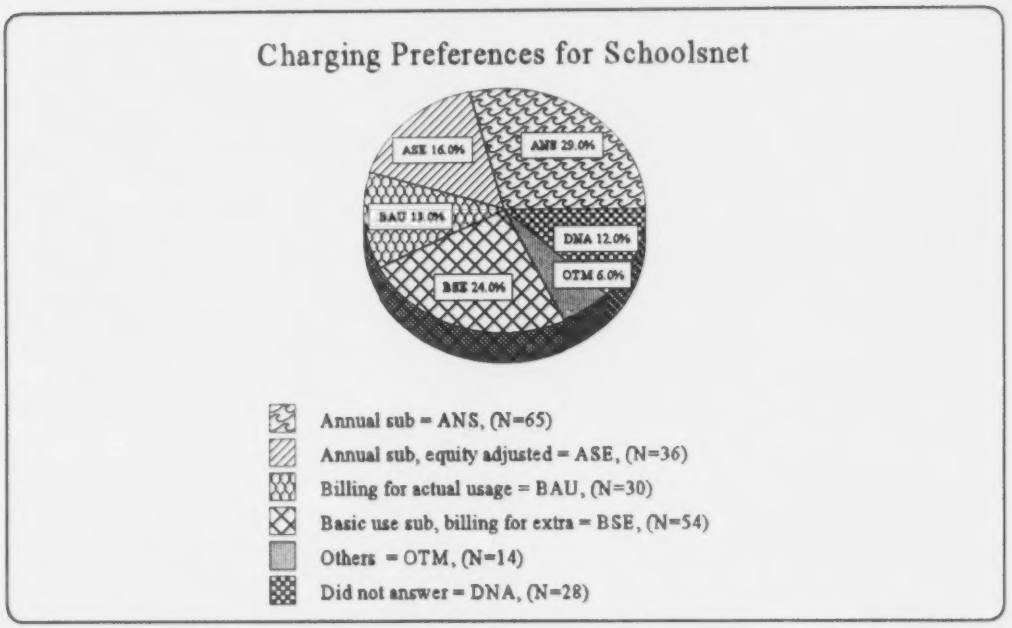
Responses about payment for the Schoolsnet included:

> We would need to monitor its use.
>
> Depends on what budget is made available.
>
> Funding by a major sponsor?
>
> Usage would have to be very limited, this depending [on] the purpose of the [Schoolsnet use] for us.

The final question relating directly to the cost of the Schoolsnet was, "If cost recovery was required, on what basis would you prefer to be charged for network use?" Figure 30 shows the choice made by all respondents and appendix table B4–1 shows the response by their role in the school and preference.

Figure 30

Charging Preferences for Schoolsnet


Charging Preferences for Schoolsnet
ASE 16.0%
ANS 29.0%
BAU 13.0%
DNA 12.0%
OTM 6.0%
BSE 24.0%
Annual sub = ANS, (N=65)
Annual sub, equity adjusted = ASE, (N=36)
Billing for actual usage = BAU, (N=30)
Basic use sub, billing for extra = BSE, (N=54)
Others = OTM, (N=14)
Did not answer = DNA, (N=28)

Other options put forward included the Ministry of Education still funding the Schoolsnet, and charging a monthly subscription covering all fees. Among these comments about fees were arguments against paying for the Schoolsnet and statements that any cost must remain modest otherwise schools will not use it.

The costs of toll calls have shown themselves to be a disincentive to use. Furthermore, the competing demands on school funding may lead to Schoolsnet missing out due to such factors as, the (in)ability of parents to pay school fees, affecting whether or not funding is available. Paying for time was commented upon as "insidious" and severely limiting the available time spent on the Schoolsnet, learning how to use it and using it for educational purposes. This argument concluded with Schoolsnet being unlikely to be affordable unless specific extra funding was directed towards it.

A significant point was, that as the other Internet service providers are getting more "affordable", placing a fee on Schoolsnet would drive it straight into the market place where cost for service is the deciding factor. A telling comment about this situation was, "it is difficult to make a choice without some monetary information" on all the options available.

The interviews also covered the issue of charges. Face-to-face responses could be placed into two categories: those opposing charges, and those saying charging for a good service is acceptable. Several remarks indicating the arguments are quoted below:

> Charging would be appropriate if the Schoolsnet went to a contemporary graphical user interface with mouse controls etc, yet retained its educational focus and content.
>
> The ministry should be aware that schools will pay for a good service and resources.

> If the network meets the needs, then they will pay for it.
>
> In a public education system people should not have to pay for Schoolsnet, education is a public good.
>
> Continue with it being a "free" resource, if charges were introduced then the more affluent schools would have more and the less affluent schools less access to the Schoolsnet.
>
> We already pay business [phone] rates for connecting to Schoolsnet and this is not fair, we are not using Schoolsnet for business, this is used for education, this is a concern. There is no special technology budget, the money comes out of school running costs. There is concern over the costs of communications to the network, [I] would prefer a straight minimal maintenance cost and a down load material cost, as learning to use the Schoolsnet is a lengthy operation and current time based costs hinders this. Also, if there are charges, who pays is an equity issue.
>
> There should be no charges, schools do enough buying hardware and training personnel, the ministry supplying the Schoolsnet is a valid contribution to, and part of, the curriculum.
>
> There should be no hourly rate, this really discourages use and thus experience. Also if charges were bought in, opposition from within the school could arise as to why this should get the money when something else is preferred by some other teachers . . . If it got expensive, it would jeopardize use, even stopping home use of Schoolsnet.

As can be seen, there is a range of opinion, the majority arguing for no charges, and some users willing to pay for the service having a high quality format, software interface, and content for educational use.

The ability to pay, what this expense displaces, and exactly what will be obtained for how much are quite probably the next questions to be asked in relation to charges for the Schoolsnet by both users, the provider and any future study on what a network for schools should be.

Final Remarks

The final question in the *users questionnaire* asked if there were any further comments the respondents would care to make. This open ended question had about 20 percent of people making positive remarks along the lines of the Schoolsnet being a great concept, with a local orientation, and an excellent "Helpdesk", and showing an appreciation of an educationally orientated network that fits in with school programmes. Some said they were pleased to be able to read the *Education Gazette* on line.

The expectation that it could get better was there, with the opinion that there was an unrealised potential behind the Schoolsnet. The components of further success were stated as: better software, more users, higher level of activity, increased curriculum content, and a reasonable and equitable cost structure for all users.

A further dimension was people's attitude towards the Schoolsnet. It was felt that unless Schoolsnet is shown to be useful for communicating to other people meaningful to you, and a source of useful information, then take up among a wide percentage of people in schools is hindered. The difficulty with the software for some users was a multiplying factor to a lack of belief that Schoolsnet has real value. Therefore, even with a contemporary software interface, and a technically reliable and fast system, training should include motivational information as well as "how to" facts. The method suggested, on a nationwide scale, was a group of regional facilitators who would help with technical support and the integration of the Schoolsnet into the learning practices, with an emphasis on increasing competence and confidence. The regional facilitator would also be important in enhancing awareness of what the Schoolsnet has to offer, and promoting a positive attitude about the capabilities and usefulness of Schoolsnet.

DISCUSSION

Using the Schoolsnet

"I am really grateful that the initiative was taken to set up something like Schoolsnet to enable teachers and schools to be able to use this tool of the 20th century."

From the Schoolsnet noticeboard discussion

The most common use of Schoolsnet for teachers and school staff is for communicating through e-mail. Finding information in the Schoolsnet Noticeboards and Directories, or on the Internet through "Gopher" and the "World Wide Web" " Lynx" text browser, is the second most likely use the Schoolsnet will be put to. Students share this usage preference with communications being the first purpose and information finding second. A slightly different perspective, however, is adopted by student and school staff regarding their purposes. Teachers, principals and other staff use the Schoolsnet for classroom teaching or professional development purposes such as searching for lesson relevant material, arranging with another teacher over the Schoolsnet to bring both classrooms into a project, or gathering information that is professionally significant. Students, while participating in classroom activities, also use the Schoolsnet to expand the "playground", or social environment. This is especially true of those with experience. These students display a sophistication in exploiting the capacity of the system by treating it as a synchronous and asynchronous communications medium using "chat" and e-mail according to whether or not the person they wanted to speak to is currently logged into the system. Students' utilisation of Schoolsnet information features is more directed to their own work, a student: or small group, writes a story to post onto the "Story corner\writing corner" and get feedback on it. Alternatively they may tackle a "brawny brainteaser" exercise to gain a sense of accomplishment by solving it.

When examining the frequency of use of Schoolsnet, the returns show that over half of the respondents used the Schoolsnet at least weekly. This includes a core group of regular users; however in every school this group tends to be relatively small. During the researcher's school visits an average of only 2 or 3 staff users per school was the norm. There were exceptions, such as in large urban secondary schools, and in schools that allowed or encouraged student use, where user numbers could be measured in double figures or up to full classroom size numbers.

The location data reveal the extensive use of the home as the site for school staff logging in. A comment repeated during interviews was that this occurred in urban settings where no cost was involved for the domestic phone line usage thus relieving the school of having to pay business rates for calls. Such home use by teachers also coincided with their preparation time of lesson material. The prominence of classroom and library locations for logins fits with the growing integration of Schoolsnet into teaching and classroom use.

Internet usage is in accord with the emphasis on communications, in this case via Internet e-mail. The information searching tools are the next most popular aspect of Internet use, albeit within the text only parameter of the Schoolsnet. From the interviews and questionnaires, the introduction of a graphical user interface with mouse control, ranks as the most desired improvements for the Schoolsnet amongst users. Reasons behind this suggested improvement include the increasing

availability of other Internet service providers, and the ease of use of GUI systems. Such an improvement would bring the Schoolsnet into "standard" school computing, which is an icon driven "Windows" "Mac", or "Acorn" environment.

Schoolsnet Discovered

"The network has revolutionised personal communication for me."

"I have also found the interface difficult to get used to, although it is now second nature for most things."

From the Schoolsnet noticeboard discussion

The phase one study identified the three stages that a person went through in using the Schoolsnet as **exploration, discovery** and **promotion**. At that time it was considered that most users were in the **exploration** phase. The current results show that the majority of users have moved on to the following phase, **discovery**.

The initial motivations to explore Schoolsnet are centred around an individual's desire to explore this form of computer network, technology training, and/or assistance or demonstrations from colleagues. The conclusion may be drawn that if an individual does not have the desire to try it, time available, or feels intimidated by the way the network appears to operate, then the first step towards exploring the Schoolsnet is extremely dependent on a "guide" to show them through. This "guide" acts as a personal trainer or advisor during those first and uncertain uses of the Schoolsnet. This fits with the major form of promotion reported from schools as being "buddy" training. It has the benefit of a person being reasonably available to answer questions and most importantly, direct training on the Schoolsnet at the pace of the learner and towards their needs.

The importance of gaining assistance when exploring the Schoolsnet cannot be overstated. It was notable that 51 percent of users had some difficulty in finding their way around the Schoolsnet and the consequences of that difficulty were summed up in a Schoolsnet noticeboard discussion comment:

> The time spent learning how to use this system would put off many teachers who are not slightly computer literate and they are the very teachers who need to be encouraged to use the system to broaden its use base across all classes.

The improved interface is seen by staff as one sure method of overcoming this difficulty. The support measures that have been the most useful to date include, the Schoolsnet reference guide, information technology teacher development activities, a colleague's in-school help, and the "help desks" of the Ministry of Educations Schools Network Unit, and the LEA IT Helpdesk.

The importance of capitalising on these support measures, and recognising and developing the best new ones, is emphasised by an interviewee regarding the difficulty a user can have.

> The medium prevents the message.

A key point regarding promotion of the Schoolsnet in a school is that it is much easier if the students are involved. When a partnership between teachers and students is formed in learning about the capacity of the Schoolsnet, how to use it and how to promote it, an atmosphere develops of

"someone here knows how to do this, and it is not necessarily the teacher, but that does not matter". Joint teacher-student use of the Schoolsnet places the network in a teacher as learner relationship on a daily basis.

The Schoolsnet Contributes to the Learning Process

I have found this system most useful for contacting other teachers throughout the country and finding information for school policies, e.g., on technology.

If you're new at it, it's a huge step. I'm taking the attitude that in the end it will be worth it as both a communication and research tool on a very broad front.

From the Schoolsnet noticeboard discussion

A principal during the school visit said, "This is too important to get wrong". The Schoolsnet is important in the learning process and context as being both an aid in learning the curriculum and an aspect of the curriculum itself. This remark was referring to the importance that information technology will play in communicating and dealing with information and, in turn, the place of communicating and information in learning.

An indicator of the importance of Schoolsnet was the response to the question "Do you have teaching objectives involving the Schoolsnet?" While a larger proportion did not, 47 percent, a substantial proportion did, 42 percent, showing a firm educational usage pattern has emerged. Fewer respondents achieved their objectives than intended due to frustration with the interface, severe limits on access with computers, modems and phone lines, or uncertainty as to how to implement the teaching objectives with Schoolsnet. These situations hinder Schoolsnet's contributions to the learning process.

While a large number of users had not used the curriculum activities on the Schoolsnet, there is a clear message that Schoolsnet does contribute to a student's education—61 percent of teachers and school staff respondents consider that it does. An even stronger indication comes from the students: 92 percent of them saying that it helped their learning.

Students use the Schoolsnet, and value that use. Both central functions of the Schoolsnet were evident—communicating with people is seen as a way to enlarge the number who can help with their learning, while also increasing the amount of information available.

When the Schoolsnet was rated by users on its contribution to the essential learning skills of the curriculum, it had approval by users, most notably in problem solving skills, along with communication and information handling skills, social and co-operative skills, and personal development. Among the essential learning areas, language study, and science featured, along with technology as areas benefiting from use of the Schoolsnet.

To extract that value from the Schoolsnet, however, requires a clear understanding of the actions required to achieve that goal. These include training and ongoing support for staff, realistic technical requirements, and practical activities that provide learning benefits to students. It is clear from the survey that some teachers and principals have a good understanding of what is required and are confidently carrying them out. It is equally clear that some are confused and unsure of how to integrate the Schoolsnet into the classroom. Underlying all this is the difficulty of the interface and the increasing spread of an easier-to-learn graphical interface. A tension exists though between the desire

for an easier to learn and operate computer network and one that is solely dedicated to schools, teachers and students in this country.

Not withstanding the value of the Schoolsnet for learning, it must be concluded that there are major difficulties with the network and emergent competition is only highlighting these difficulties. The sources of this competition include other computer network operators, such as commercial Internet service providers, and university-assisted networks. Inevitably there will be a choice made by schools dependant upon cost, service, functionality, and content.

There is value from the Schoolsnet for the learning process. However it is currently being compromised by the technical interface and by lack of knowledge amongst teachers on how to integrate the Schoolsnet (a new medium for many), into their classroom teaching.

Placement and Purpose, Schoolsnet in the School

> *Schoolsnet is not the answer to online computer resources for schools. It IS however part of the answer. Don't take it away. If anything,* ***add*** *to its functionality.*
>
> *I would not be without the opportunities that the service offers especially to those of us with modems at home whereby we get access undisturbed at no cost to the employer.*
>
> From the Schoolsnet noticeboard discussion

There are two main aspects regarding the physical requirements and ramifications of machine placement in the schools that allows access to the Schoolsnet. These are: the purpose of use of the room the computer is placed in; and the details and costs of linking the computer to the school phone system.

The issue of linking the school computer to the network, which involves a phone line extended through to the usage area, is not the greatest difficulty a school faces. It is the number of total phone lines available for use that is the limiting technical aspect of the network. Competition for phone lines from telephone and fax, as well as the cost of use, place a limit for many on usage.

The function of the room the access computer was in proved to be a governing factor on access to the machine and usage patterns. A library location allows independent or small group access, but presents difficulties for whole class use. It is more disruptive to learning to shift a class, and their presence places a constraint on other users of the library. Similarly, when the access computer is in one classroom, other classes can find access restricted to the: "owner" class, with little or no use for others. For teachers, exploration of the Schoolsnet as part of normal teaching preparation, requires the location to be more in keeping with a teachers normal teaching preparation environment. This needs to be quieter than the teaching environment of classroom and library. Therefore when considering the physical environment that influences use of the Schoolsnet, it is less about the technical requirement, and more to do with the existing use of the location, that the Schoolsnet machine enters into.

Expanding the environment for use, increasing the number of login sites, and enhancing the technical capacity of the phone line system are the main development needs a school must consider. The current situation, in most cases, of only one machine with communication software, modem, and phone line, is the greatest environmental restriction that influences use of Schoolsnet.

The students' positive reaction to using Schoolsnet, in most cases, has teachers saying that this has increased the demand for using the Schoolsnet, and the classrooms and library where it is accessed

from have extended access hours, but they still face the development issues before it becomes possible for regular, widespread daily usage by students and staff.

What Has Been in the Past and is Wanted for the Future

The links between professionals has the potential to be a significant area for teachers and principals. The trial needs to be extended and opened to new school users.

All in all a good start, but still many things that can improve.....especially the interface.

From the Schoolsnet noticeboard discussion

The most significant change in the period between the phase one and two studies has been the development of user competence from the **exploration** to **discovery** phase. Accompanying this was the predominant view that Schoolsnet was a useful aid to learning in a number of curriculum areas. Beyond just the technology area, the Schoolsnet has gained recognition as being both an aspect of the curriculum and a means to contribute to other areas.

Students use of the Schoolsnet looks to be growing, the "cautiousness" of letting students "lose" on the network reported in the phase one study has been replaced by a majority of teachers thinking Schoolsnet helps a student's education. An almost unanimous response from students is that they think it is worthwhile, with virtually half of teachers responding that students are using the Schoolsnet in some way.

The pattern of use usually consists of starting with the communications tools and then going on to the information finding and manipulating tasks. This pattern of the development of usage is the same as that reported in the phase one study.

Another area of "growth" was the fact that more respondents reported using alternatives to the Schoolsnet, ranging from creating a network within the school, through local co-operation, to subscriptions with a commercial Internet service provider. One of the findings of the survey is that as an appreciation of how a computer network can contribute to learning has increased, so too has the demand for a network that will deliver function and content at an "affordable" price.

It is evident that an increase in functionality, or how the Schoolsnet operates (its software interface), rates first among improvements desired. Graphics, mouse control and a colour screen are the predominant technical aspects where improvements are wanted. Teachers want the Schoolsnet to "look like", and operate as, the other computer systems and software in their schools.

The second area of improvement desired from the Schoolsnet is content related; specifically, how to use that content. A guide on how to integrate Schoolsnet's communication and information capacity into the classroom would be of great assistance to many teachers. The first steps on "how do I use the network" are inevitably followed with "why do I use the network", or perhaps these questions are asked the other way around. While some have answered these questions for themselves, it would be of great value to other current users, and future users, for guidance to be readily available. One suggestion was for a regional facilitator who could offer educational advice on how best to introduce the Schoolsnet into a class for a particular topic and at that level. A "usage guide" could accompany the "reference guide" and include contributions from curriculum developers, comments from teachers who have used an exercise which they are confident is worthwhile, lesson plans or ideas, and contacts for teacher to teacher and class to class with activities having educational benefit.

How Much to Use the Schoolsnet?

The very important thing about the Schoolsnet is that it is free. Without [this cost structure, we] would not be able to afford much time on line at all and certainly not browse looking for resources for teaching. That would be a loss to say the least.

From the Schoolsnet noticeboard discussion

There were different views among respondents on what charges would be appropriate for the Schoolsnet. Opinion was divided, with many considering that it should be paid for by central government as a curriculum resource and teaching aid, and others stating that a network providing educational content with a functional, easy-to-use, interface should be paid for by schools.

The argument for "no charges" was based upon two factors, the first of those includes the reality that no charges actually means "no more charges" as, for rural users especially, the telecommunications costs have already proven too expensive for some schools. The second concern is based on equity of access, with doubts about all schools being able to afford the Schoolsnet if charges were introduced. Currently the Schoolsnet is spread over all decile groupings and if charges were introduced by the Ministry the concern over equity is likely to be realised. However it was pointed out that, without a figure on how much would have to be paid, an exact statement on what users would be willing to pay has an element of uncertainty.

The use of other computer networks in school, subscribed to or self designed, is an indicator that funds and effort will be directed towards a "network for schools" by a large number of schools. However, it is also likely that many schools will not buy these resources, as the survey found schools who had already arrived at the conclusion that the communication costs for the Schoolsnet was beyond their budget.

The comments that agreed with charges for a "schools network" were focused on it having a high level of functionality, including ease of learning and use, alongside a complete set of network information handling and communication tools. This functionality is to be matched with content directed to education. It is the Schoolsnet's content and the commercial Internet service providers' functionality that illustrates where the tension currently lies in selection of a network for schools.

A question was put to the respondents that if charges were necessary, what would be the best format. Clearly some predictability that allows for budgeting control was the favoured method, with the range from a yearly subscription covering everything, to a "basis use" subscription and paying for the more advanced features only if they are used. A division between local e-mail and noticeboards, and Internet tools could be a basis for division of the basic and advanced features of the Schoolsnet. With sufficient information, principals, boards of trustees, and teachers could make a decision on charges to be made between Schoolsnet (and what it offers), and other competing networks for schools. The decision may well encompass other information technology demands for the school.

The potential is more than the actual

"I like the way the educational material is all in one place".

It has not come close to meeting it's potential yet

From the Schoolsnet noticeboard discussion

There was an overall approval of the Schoolsnet. This approval was often tempered by frustration with an interface that was not the same as the "look" of other computer software in classroom use, and not up to the standard of features of contemporary network software. Nevertheless, students, teachers, and other Schoolsnet users have found features and aspects of the network to be of tremendous value. There are clearly stated directions for the future; namely, to improve those aspects of Schoolsnet that most need it. The value of the Schoolsnet is recognised, so too is it seen that the potential benefit of Schoolsnet is far from being reached yet.

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Appendix A

Research Instruments

A-1 Schoolsnet User's Questionnaire

Schoolsnet Evaluation
Phase Two

Users' Questionnaire

This questionnaire is part of the evaluation of the Schoolsnet, commissioned by the Ministry of Education, and undertaken by the New Zealand Council for Educational Research (NZCER).

NZCER is an independent organisation whose purpose is to promote quality education for New Zealanders through research and resources, advice and information.

The Council's staff adhere to a statement of ethics which ensure that your responses will be held in **complete confidence**. Individuals will not be identifiable in any way from this study. The questionnaire is coded solely for the purpose of administering the responses.

The Phase One part of this survey of the Schoolsnet looked at the objectives of, and issues surrounding access to, the Schoolsnet and was completed in March 1995. If you want to look at this report, you can find it on Schoolsnet, in the Teachers Noticeboard , topic number 9.

Phase Two focuses on such things as how you use the Schoolsnet, how useful you feel it is to education, how you think it could be improved, and then evaluates the curriculum facilities which were trialled on the Schoolsnet from June 1994 until September 1995.

Instructions

Please answer this questionnaire
by ticking all boxes that apply
and/or by writing in the space provided

This questionnaire should take about 20 minutes to complete

Please note:

Logging into the Schoolsnet shall be referred to as *Login*

BEST COPY AVAILABLE

Schoolsnet Evaluation Questionnaire Code[ ]

Part A

Who uses the Schoolsnet and to what extent?

1) What is your current position in your school?_____ 123456789

2) Do you use any other computer networks?
(eg. *Learning Link, Fidonet, K12, ICONZ, Compuserve, PlaNet etc)*

☐a) Yes ☐b) No

c) If Yes, please list them:

_____ c123

_____ 456

_____ 789

3) How often do you use the Schoolsnet?

☐a) Less than weekly ☐b) About once a week ☐c) 2-3 times per week ☐d) Daily

e) If you answered -d) Daily-, about how many times per day is that? _____

4) Is there an average length of time you login for?

☐a) Yes ☐b) No c) If Yes, what is the average time?_____hrs/mins

5) Is there a usual time of day or night that you login to Schoolsnet?

☐a) Yes ☐b) No c) If Yes, what is the usual time?_____am/pm

6) From where do you login to the Schoolsnet? *(Please tick any boxes that apply.)*

☐a) Classroom ☐b) Library ☐c) Technology room

☐d) Resource room ☐e) Office/administration ☐f) Principal's office

☐g) Home ☐h) Other, (*please describe)*_____ j123456789

7) Is there a usual day of the week that you login to Schoolsnet?

☐a) Yes ☐b) No

c) If you answered Yes , what are the usual days_____ c123456789

8) If you use *COM (Communications)* do you connect to the *Internet* or any other network using,
"CT-Connect to any system via Telnet?"

☐a) Always ☐b) Most of the time ☐c) Sometimes

☐d) Rarely ☐e) Never

9) If you have used the *Internet* through the *Schoolsnet*; please indicate which features you have used. Please go to question 10 if you have *NOT USED* the *Internet* through the *Schoolsnet*.

☐a) *Internet* E-mail ☐b) Telnet ☐c) Newsgroups/Usenet

☐d) Listservers ☐e) File Transfer Protocol ☐f) Gopher

☐g) Internet Relay Chat ☐h) World Wide Web ☐I) Other *(describe)*

_____ j123

_____ 456

_____ 789

10) What features of Schoolsnet do you use and how often?

Please answer the following question by rating each feature to show how often you use it. Use the scale shown below of 1 through to 5 and draw a circle around the number that indicates your use

1 I don't use this feature
2 I occasionally use this feature
3 I am likely to use this feature
4 I frequently use this feature
5 I always use this feature

a) COM-Communications	1	2	3	4	5
b) CT-Connect to any system via Telnet	1	2	3	4	5
c) Quick connects	1	2	3	4	5
d) TP-Terminal phone	1	2	3	4	5
e) EM-Electronic messaging	1	2	3	4	5
f) DIR-Directories	1	2	3	4	5
g) NB-General noticeboard	1	2	3	4	5
h) NB-Network noticeboard	1	2	3	4	5
i) NB-Student noticeboard	1	2	3	4	5
j) NB-Teacher noticeboard	1	2	3	4	5
k) File management	1	2	3	4	5
l) Miscellaneous	1	2	3	4	5
m) Interrupt menu	1	2	3	4	5

n) Where do you Telnet to most often?

_____ n 1 2 3
_____ 4 5 6
_____ 7 8 9

o) What File management features do you use?

_____ o 1 2 3
_____ 4 5 6
_____ 7 8 9

p) What Interrupt menu features do you use?

_____ p 1 2 3
_____ 4 5 6
_____ 7 8 9

11) What do you use the Schoolsnet for; communicating, gaining information or both?

☐a) Communicating ☐b) Gaining information

☐c) Other *(describe)*_____

_____ d 1 2 3
_____ 4 5 6
_____ 7 8 9

Part B

What determines exploration, discovery and promotion of the Schoolsnet ?

12) What caused you to look into the Schoolsnet? *(Please tick any that apply.)*

☐a) Your own interest ☐b) Other colleagues ☐c) Request from students

☐d) Demonstration of Schoolsnet ☐e) Technology training ☐f) Other

reasons*(describe)*

_____ g 1 2 3

_____ 4 5 6

_____ 7 8 9

13) Could you please indicate your familiarity with computer networks before you started using the Schoolsnet;

1=no familiarity **5 = very familiar**

1 2 3 4 5

14) Could you please describe your current familiarity with computer networks?

1=no familiarity **5 = very familiar**

1 2 3 4 5

15) Could you please describe your current familiarity with Schoolsnet?

1=no familiarity **5 = very familiar**

1 2 3 4 5

16) How long have you been using other computer networks for? *(Please go to the next question if you do not use any other computer networks.)*

a) No. of years____ b) No of months_____ c) No of weeks_____

17) How long have you been using the Schoolsnet for? *(Please indicate length of time.)*

a) No. of years____ b) No of months_____ c) No of weeks_____

18) Approximately how many "logins" did it take before you felt comfortable with logging in?

☐a) 1-5 ☐b) 6-10 ☐c) 11-15 ☐d) 16-20 ☐e) 21 or more

19) Did you get support when exploring the Schoolsnet? *(If you did , please indicate where from.)*

☐a) No ☐b) The Schoolsnet Pilot Reference Guide

☐c) Colleague within your school ☐d) Colleague outside your school

☐e) Friends and family ☐f) Schoolsnet Help Desk/System Administrator

☐g) L.E.A. IT Helpdesk ☐h) People in the computer sale or service industry

☐I) I.T Teacher Development Programme ☐j) Other support, *(please describe)*

_____ k 1 2 3 4

_____ 5 6 7 8 9

_____

_____

20) Did you have any difficulties finding your way around the Schoolsnet?

☐a) Yes ☐b) No

c) If you had any difficulties, could you please describe them?

_____ c 1 2 3

_____ 4 5 6

_____ 7 8 9

21) Do you have personal teaching objectives *involving* the Schoolsnet?

☐a) Yes ☐b) No c) *(Please explain)*_____ c 1 2 3 4 5

_____ 6 7 8 9

_____

_____

_____

_____

_____

22) How often do you achieve your personal teaching objectives *involving* the Schoolsnet?
(Please tick one only)

☐a) Always ☐b) Most of the time ☐c) Sometimes ☐d) Rarely ☐e) Never

f) Please explain;

_____ f 1 2 3 4

_____ 5 6 7 8 9

_____

_____

23) Is the Schoolsnet promoted in your school? *(Please tick all boxes that apply.)*

☐a) Through training sessions ☐b) "Buddy" training ☐c) Committee responsible for Schoolsnet

☐d) During teachers meetings ☐e) Via a noticeboard ☐f) Not at all ☐g) Other,
(Please explain)

_____ h 1 2 3 4

_____ 5 6 7 8 9

_____

_____

24) Would you use the Schoolsnet to assist with teaching in preference to another network?

☐a) Yes ☐b) No ☐c) Unsure ☐d) N/A

e) Please explain your answer

_____ e 1 2 3

_____ 4 5 6

_____ 7 8 9

Part C

Value to the learning process & contribution towards the curriculum

25) The following items are on, or have been on, the Schoolsnet. How useful were they, or are they, to your classroom teaching?

Please answer the following question by rating each curriculum item to show how useful it was to your teaching. Use the scale shown below of 0 through to 5 and draw a circle around the most appropriate number.

0	Have not used	**1**	Not useful
2	Marginally useful	**3**	Moderately useful
4	Highly useful	**5**	Very highly useful

a) "Schoolsnet Drivers License".....	0	1	2	3	4	5
b) "Trade Education Project-International Action"..	0	1	2	3	4	5
c) "Trade Education Project Global Markets".....	0	1	2	3	4	5
d) "Trade Education Project-Competitive Edge".....	0	1	2	3	4	5
e) "Indigenous Schools Project".....	0	1	2	3	4	5
f) "Story Corner / Writing Corner".....	0	1	2	3	4	5
g) "Opinion Corner".....	0	1	2	3	4	5
h) "Share Market Clash".....	0	1	2	3	4	5
I) "Brain Teaser".....	0	1	2	3	4	5

j) If you have used any of the above , please name the item that was most useful and describe how it helped your teaching?

_____ j123

_____ 456

_____ 789

_____

_____

_____

_____

26) Do you feel that the Schoolsnet contributes to students' education? *(Please tick one only.)*

☐a) Yes ☐b) No ☐c) Unsure

d) Please explain;

_____ d123

_____ 456

_____ 789

_____

_____

_____

_____

_____

_____

_____

27) How do you rate the usefulness of the Schoolsnet for helping you teach each of the "Essential Skills" of the New Zealand Curriculum?

Please use the following rating of 1 through to 5, to indicate usefulness, where

1 Not useful
2 Marginally useful
3 Moderately useful
4 Highly useful
5 Very highly useful

a) Communications skills	1	2	3	4	5
b) Information skills	1	2	3	4	5
c) Problem-solving and decision making skills	1	2	3	4	5
d) Self-management and competitive skills	1	2	3	4	5
e) Work and study skills	1	2	3	4	5
f) Social and co-operative skills	1	2	3	4	5
g) Numeracy skills	1	2	3	4	5
h) Physical skills	1	2	3	4	5

28) How do you rate the usefulness of the Schoolsnet for contributing to the "Essential Learning Areas" of the New Zealand curriculum?

Please use the above rating scale, of 1 through to 5 , from question 27 to answer this question.

a) Language and Languages	1	2	3	4	5
b) Mathematics	1	2	3	4	5
c) Science & Environment	1	2	3	4	5
d) Technology	1	2	3	4	5
e) Social Science	1	2	3	4	5
f) The Arts	1	2	3	4	5
g) Physical Development	1	2	3	4	5
h) Personal Development	1	2	3	4	5

(Please explain.)

_____ 123
_____ 456
_____ 789

29) Do you make the Schoolsnet available for student's use? *(Tick any appropriate box)*

☐a) No

☐b) Yes, students spread their work (eg writing) to a wider audience

☐c) Yes, students communicate via "chat" and "electronic messaging"

☐d) Yes, students gather information

☐e) Yes, students become familiar with the theory and practise of computer networks

☐f) Yes, for other reasons, *please state below*

_____ 123
_____ 456
_____ 789
_____

Part D
Future Use

30) Has *your* usage of the Schoolsnet changed over the time you have been using it in terms of number of hours on average per week logged on?

☐a) Yes ☐b) No

(If Yes, please show the approximate previous and current numbers by completing Q.s 30c & 30d)

c) Previous hrs pw_____ d) Current hrs pw_____ *(Please explain.)*

e 1 2 3
4 5 6
7 8 9

31) If you teach students with the aid of the Schoolsnet, has that number of students changed over time?

☐a) Yes ☐b) No ☐c) I do not teach students with the aid of Schoolsnet

(If Yes, please show the approximate previous and current numbers by completing Q.s 31d & 31e)

d) Previous number of students_____ e) Current number of students_____ *(Explain.)*

f 1 2 3
4 5 6
7 8 9

32) Do you organize students to work around a computer connected to the Schoolsnet?

☐a) Yes ☐b) No

c) If you answered Yes, what is the average number of students per computer at one time?_____

d) Ideally, what number of students would you like to see per computer at one time?_____

33) Is there any curriculum material that you would like to see added to the Schoolsnet?

☐a) Yes ☐b) No ☐c) Unsure

d) Please explain;

d 1 2 3
4 5 6
7 8 9

34) Are there any additional computer features (capability of the Schoolsnet) that you would like to see? *(Tick any feature that you would like added)*

☐a) Colour screen ☐b) Graphics ☐c) Mouse control ☐d) Sound

☐e) No, there are no additional features I would like to see ☐f) Other, (*describe)*

g 1 2 3
4 5 6
7 8 9

35) Do you think that there should be charges for using the Schoolsnet?

☐a) Yes ☐b) No ☐c) Unsure *(Please explain your answer.)*

d 1 2 3
4 5 6
7 8 9

36) Would charges for the Schoolsnet change your usage of the network?

☐a) Yes ☐b) No ☐c) Unsure *(Please explain your answer.)*

_____ d 1 2 3

_____ 4 5 6

_____ 7 8 9

37) It is likely that at some time in the future, some degree of cost recovery will be required for the Schoolsnet operation. On what basis would you prefer to be charged for network use?
(Please chose the option you would prefer.)

☐a) Annual subscription covering all charges

☐b) Annual subscription, but "equity adjusted" for factors such as access costs, number of user I/D's

☐c) Billing for actual usage, such as online time or amount of information transferred

☐d) A sub to cover some modest level of use, followed by time-based billing beyond that

☐e) Other *(describe)* _____ f 1 2 3 4

_____ 5 6 7 8 9

_____

_____

_____

38) Do you have any other comments you would like to make about the Schoolsnet?

_____ 1 2 3

_____ 4 5 6

_____ 7 8 9

_____

_____

Thank you very much for your time and energy in completing this questionnaire. Could you please now send this questionnaire back to NZCER in the postage paid envelope provided.

Schoolsnet Project Co-ordinator
NZCER
PO Box 3237
Wellington

If you have any queries please contact:
David Harris
NZCER
Phone (04) 384-7939 x 822
Fax (04) 384-7933
Schoolsnet e-mail "harrisd1"
Internet e-mail "harrisd1@schools.minedu.govt.nz"

Schoolsnet Diary/Log Please record your use of the Schoolsnet for 5 consecutive days.

Instructions; could you please briefly note the details of your use of the Schoolsnet below.

Date and day. a)	Approximately what length of time did you "login" for? b)	Where did you "login" from? c)	What features did you use? d)	Were there any problems encountered during use or e) connection?	What support was available to you during your "login" time? f)	What was your main purpose for this use of Schoolsnet? g)	Overall, were you satisfied with your use of Schoolsnet during that day? h)
1)							
2)							
3)							
4)							
5)							

79

I , or someone from NZCER, will be calling upon your School to pick up these logs at the agreed visiting time and date.
David Harris, Schoolsnet Evaluation Project Co-ordinator, NZCER, Box 3237, Wgtn. Fx 04-3847 933, Ph 04-384 7939 x 822, E-mail "harrisd1". 80

Schoolsnet Evaluation Student Questionnaire Code[ ]

1) *About* how many times have you logged into or used the Schoolsnet? *Please tick one box*

☐a) 1-5 ☐b)6-10 ☐c) 11-15 ☐d) 16-20 ☐e) 21 or more

2) Where do you use the Schoolsnet? *Please tick any boxes that apply*

☐a) Classroom ☐b) Library ☐c) Technology room

☐d) Resource room ☐e) Office/administration ☐f) Principal's office

☐g) Home ☐h) Other, *please describe* _____ 123456789

3) How did you learn to use the Schoolsnet? *Please describe*

_____ 123

_____ 456

_____ 789

4) What activities (or menu options) of the Schoolsnet have you used? *Please list them*

_____ 123

_____ 456

_____ 789

5) When you are logged onto the Schoolsnet, where do you go if you need help? *Please describe.*

_____ 123

_____ 456

_____ 789

6) Do you use any other computer network at home or at school? *Please list what and where*

_____ 123

_____ 456

_____ 789

7) Do you think that using Schoolsnet helps your learning in any way? *Please explain how.*

_____ 123

_____ 456

_____ 789

8) Are there any changes you would like to see to the Schoolsnet? *Please describe or list them.*

_____ 123

_____ 456

_____ 789

Thank you for helping in this evaluation of the Schoolsnet.

David Harris, Schoolsnet Evaluation Co-ordinator, NZCER, Box 3237 Wellington, E-mail "harrisd1"

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A–4 Schools Visits Interview Schedule

Schoolsnet evaluation open interview questions.

Preamble: The Ministry of Education has commissioned the New Zealand Council for Educational Research to complete a nationwide assessment of the Schoolsnet in terms of it's value to education and use by teachers and students. The results of this research should be available next May on the Schoolsnet.

**Please answer these questions in terms of your own use, not for or on behalf of your School.*

Questions about using the Schoolsnet

1: What aspects of the Schoolsnet do you find the most useful?

2: What caused you to look into Schoolsnet?

3: Were you familiar with computer networks before starting to use Schoolsnet?

4: On a scale of 1-5, (5 being highest) how do you rate your confidence on Schoolsnet?

5: What were the barriers in the way of you getting to use Schoolsnet?

6: What support did you have while getting to learn Schoolsnet?

7: How do you use Schoolsnet in the context of your teaching?

8: In what way does , or could , the Schoolsnet modify provision of the curriculum in terms of the essential learning areas and the essential skills?

9: How is the Schoolsnet promoted in your school?

10: Are there any changes to Schoolsnet you would like to see?

11: Have you any comment on what charges are appropriate for the Schoolsnet?

12: Do you see the Schoolsnet login I/D as a personal, or a group, or a class I/D?
Do you think there is a need for a password?

****

Questions about installing and maintaining the Schoolsnet

13: Where are the computers that allow access to the Schoolsnet situated?

14: Were there any physical changes that had to be made to the room?

15: Has the Schoolsnet had any impact on telephone line usage or arrangements in your school, eg PABX and modem incompatibility, impact on phone expenses?

16: Has the Schoolsnet altered the use or access to the room where the computer is?

17: Do you think there are any differing physical environment (or layout) needs for different users of Schoolsnet? i.e. Principals, teachers, library staff, students, administrators, etc.

18: Are there any issues regarding computer hardware or software that relate to your school using Schoolsnet?

****

Appendix B

Questionnaire Results by Role in School and Other Data

Role key

Avg	=	Average result from all *users' questionnaires*
Prin	=	Principal
ADP	=	Assistant or Deputy Principal
HOD	=	Head of Department
Snrt	=	Senior Teacher
Teach	=	Teacher
ATTA	=	Assistant Teacher or Teacher's Aide
Lib	=	Library staff
Technical	=	Technology Co-ordinator or IT Manager or Systems Administrator
Other	=	Combined role e.g., Teacher/Librarian or other role such as Secretary or Student

Table B1-1

Role in school compared to frequency of use

Frequency	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
Less than weekly	43	52	44	43	55	36	25	40	63	29
Weekly	22	30	16	13	15	28	13	–	13	36
2-3 weekly	18	9	19	20	15	24	38	20	–	14
Daily	14	3	19	20	15	8	25	40	25	21

Table B1-2

Role in school compared to login location

Frequency	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
Classroom	33	33	53	23	35	40	13	–	–	14
Library	28	21	19	30	40	22	25	100	38	43
Tech. Rm.	9	6	6	17	5	14	–	–	–	–
Res. Rm.	28	21	19	30	40	22	25	100	38	43
Off. Admin.	12	21	6	3	–	17	13	–	13	29
Prin. Office	3	15	–	–	5	–	–	–	–	–
Home	36	27	44	67	25	28	50	40	63	21
Other	4	6	–	3	–	8	13	–	25	–

Table B1-3

Role in school compared to frequency of using the Internet

Frequency	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
Always	5	12	3	–	10	4	13	–	13	–
Mostly	11	12	22	17	–	7	25	–	–	7
Sometimes	29	12	28	47	40	28	25	60	13	43
Rarely	13	9	13	10	20	14	13	–	25	14
Never	27	39	28	20	10	29	13	40	38	29

Table B1-4

Role in school compared to what Internet features are used

Frequency	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
E-mail	60	36	63	77	50	63	75	80	50	64
Telnet	20	12	13	37	10	18	50	40	25	21
Newsgrps	17	18	19	27	20	10	25	–	25	14
Listservers	9	6	6	17	5	4	25	40	13	21
FTP	6	–	6	10	15	3	25	–	–	14
Gopher	32	27	41	50	35	19	50	40	50	36
IRC	9	3	9	20	10	6	13	20	–	14
WWW	25	18	28	33	30	18	63	40	25	14
Other	–	–	–	–	–	–	–	–	–	–

Table B1-5

Role in school compared to Schoolsnet features used

Other	Avg	Prin	ADP	HOD	SnrT	Teach	ATTA	Lib	Technical	
	%	%	%	%	%	%	%	%	%	%
COMMUNICATION										
1		28	25	15	35	32	12	25	14	31
2		28	32	18	5	19	25	–	–	38
3		4	18	30	20	16	13	50	57	8
4		36	18	19	35	18	25	25	14	23
5		4	7	18	5	15	25	–	14	–
TELNET										
1	46	52	40	25	53	59	25	25	20	46
2	22	26	36	38	5	15	25	25	20	15
3	18	9	12	25	26	15	12	50	20	15
4	8	4	4	8	16	7	12	–	20	15
5	5	4	8	4	–	3	25	–	20	8
QUICK CONNECTS										
1	60	68	71	43	59	67	43	35	40	45
2	15	18	12	19	–	14	29	33	20	18
3	9	5	12	5	6	12	–	–	20	9
4	10	–	4	29	30	3	–	33	–	9
5	6	9	–	5	–	3	29	–	20	18
TERMINAL PHONE										
1	24	26	30	37	26	17	14	–	14	36
2	33	30	33	33	39	27	71	67	71	18
3	13	13	7	8	5	21	–	–	–	18
4	20	17	26	13	21	24	14	–	14	9
5	9	9	4	8	10	11	–	–	–	18
ELECTRONIC MESSAGING										
1	7	4	11	7	11	7	–	–	–	7
2	16	20	11	11	21	18	25	–	25	7
3	18	16	18	7	26	13	25	25	25	36
4	29	32	40	43	21	29	–	25	12	14
5	30	24	21	32	21	32	25	50	38	36
DIRECTORIES										
1	18	21	8	25	17	20	14	–	–	23
2	25	33	29	12	28	23	57	–	13	31
3	21	25	25	17	11	20	14	33	29	15
4	26	12	29	25	39	28	14	67	29	15
5	10	8	8	21	6	8	–	–	29	15
GENERAL NOTICEBOARD										
1	17	15	29	11	16	18	12	25	–	21
2	30	33	17	22	47	26	50	25	43	43
3	28	26	29	22	21	37	12	25	14	21
4	18	15	25	30	10	14	25	25	29	7
5	6	8	–	15	5	5	–	–	14	7

Table B1-5 (Contd.)

NETWORK NOTICEBOARD										
1	24	33	24	17	28	19	57	–	27	23
2	30	17	24	26	33	35	43	25	14	46
3	23	21	32	22	11	26	–	50	14	15
4	18	25	16	22	22	14	–	25	29	15
5	5	4	4	13	6	5	–	–	14	–
STUDENT NOTICEBOARD										
1	28	36	25	30	22	21	67	25	20	50
2	30	28	29	35	33	32	33	25	20	33
3	20	12	36	15	17	20	–	50	20	8
4	15	16	7	10	17	21	–	–	20	8
5	6	4	4	10	11	6	–	–	20	–
TEACHER NOTICEBOARD										
1	22	24	20	17	22	18	25	33	12	46
2	30	32	20	9	39	38	37	33	25	38
3	19	12	32	17	17	20	12	33	12	15
4	23	20	28	43	17	21	12	–	37	–
5	5	8	–	13	6	3	12	–	12	–
FILE MANAGEMENT										
1	58	59	52	48	58	68	43	67	29	67
2	22	23	36	24	32	16	29	–	29	–
3	10	9	8	19	5	9	–	–	29	22
4	55	4	–	9	5	5	–	33	–	11
5	4	4	4	–	–	2	29	–	14	–
MISCELLANEOUS										
1	75	81	65	67	67	86	80	100	80	44
2	14	14	26	28	17	4	–	–	20	11
3	7	5	4	7	6	8	–	–	–	33
4	1	–	4	–	6	2	–	–	–	–
5	1	–	–	–	–	–	20	–	–	–
INTERRUPT										
1	51	59	50	58	42	59	17	50	17	36
2	23	36	25	26	26	14	33	–	33	27
3	11	–	12	10	16	7	17	50	33	27
4	9	4	8	–	16	11	33	–	–	9
5	5	5	4	5	–	9	–	–	17	–

Note: scale - 1 = I don't use this feature, 2 = I occasionally use this feature, 3 = I am likely to use this feature, 4 = I frequently use this feature, 5 = I always use this feature.

* numbers are in percentage and rounded

** average is the questionnaire-wide response

Table B1-6

Role in school compared to overall purpose of use

Other	Avg.	Prin.	ADP	HOD	SnrT.	Teach	ATTA	Lib.	Technical	
	%	%	%	%	%	%	%	%	%	%
Communication	81	58	75	83	75	90	100	80	8	86
Information	68	55	63	73	70	68	88	80	63	93
Other	7	6	16	3	–	4	–	20	25	7

Table B2-1

Role compared with familiarity with networks before beginning use of the Schoolsnet

Other	Average	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	
	%	%	%	%	%	%	%	%	%	%
1	45	50	50	37	30	60	25	–	25	43
2	22	27	25	3	35	20	25	25	12	29
3	17	17	16	20	30	11	12	75	12	7
4	11	7	–	20	5	9	25	–	37	21
5	5	–	9	20	–	–	12	–	12	–

Note: scale—1 = no familiarity, 2, 3 = some familiarity, 4, 5 = very familiar.

Table B2-2

Role compared with current familiarity with the Schoolsnet

Other	Average	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	
	%	%	%	%	%	%	%	%	%	%
1	3	3	6	3	–	1	–	–	12	–
2	33	43	28	27	40	31	37	25	37	36
3	33	30	37	33	30	33	12	25	37	29
4	21	23	28	23	20	24	50	25	–	7
5	10	–	–	13	10	10	–	25	12	29

Note: scale—1 = no familiarity, 2, 3 = some familiarity, 4, 5 = very familiar.

Table B2-3

Role compared with what support there was when exploring Schoolsnet

	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
No support	11	12	9	20	5	8	13	–	13	7
Guide	39	45	47	47	25	25	38	80	63	57
College	35	21	38	30	35	40	38	20	50	43
Outside college	4	12	–	7	5	4	–	–	–	–
Friends/family	7	–	6	17	5	10	–	–	–	7
SN Helpdesk*	29	30	41	27	15	22	25	60	63	29
LEA ITHD**	28	39	28	10	30	39	13	–	13	7
Computer industry	3	3	3	–	5	4	–	–	–	–
IT teacher dvlpt.	38	33	47	7	60	56	–	–	–	29
Other support	6	6	6	–	5	6	13	–	13	14

Note: * Schoolsnet Helpdesk

** Learning Enhancement Associates Information Technology Helpdesk

Table B2-4

Role compared to what caused you to look into Schoolsnet

	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
Own interest	55	58	66	77	50	44	75	40	50	50
Other colleagues	21	12	22	23	20	24	13	20	13	21
Student request	5	6	6	10	5	4	–	–	–	–
Demonstration	21	12	22	23	20	24	13	20	13	21
Technical training	51	45	53	30	65	69	38	–	25	21
Other	8	6	6	17	5	3	13	–	25	29

Table B2-5

Current familiarity with Schoolsnet and available support

	Support		1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%	N	%
Totals			6	2.7	73	33	72	32.6	47	21.3	23	
10.4												
No	24	11	2	33	7	10	8	11	4	9	3	13
Reference guide	88	39	2	33	19	26	30	42	24	51	13	57
Colleague in school	80	35	2	33	31	42	26	36	14	30	7	30
Outside colleague	10	4	–	–	2	3	4	6	3	6	1	4
Friends/family	16	7	–	–	4	5	7	10	4	9	1	4
SN Helpdesk	66	29	1	17	9	12	24	33	19	40	13	57
LEA IT helpdesk	63	28	1	17	17	23	26	36	15	32	4	17
Computer industry	6	3	–	–	3	4	3	4	–	–	–	–
IT dvlpt. programme	86	38	1	17	30	41	32	44	18	38	5	22
Other	14	6	–	–	4	5	4	6	4	9	2	9

Note: scale - 1 = no familiarity, 2, 3 = some familiarity, 4, 5 = very familiar.

Table B3-1

Role compared with rating of Schoolsnet's usefulness in teaching essential skills

	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
COMMUNICATION SKILLS										
1	7	5	14	17	6	3	–	–	–	9
2	8	–	11	8	6	11	–	–	20	–
3	20	15	18	16	20	20	50	–	20	18
4	36	50	21	33	40	42	12	50	20	36
5	29	30	36	25	27	23	37	50	40	36
INFORMATION SKILLS										
1	8	5	14	17	13	3	–	–	–	9
2	11	–	7	12	6	14	25	–	–	18
3	22	25	18	12	26	27	12	–	20	27
4	34	45	39	25	26	38	25	50	20	18
5	25	25	21	33	26	17	37	50	60	27
PROBLEM SOLVING AND DECISION MAKING										
1	14	10	18	21	13	14	12	–	–	9
2	14	5	15	12	33	10	12	–	20	36
3	37	45	33	37	40	39	25	50	40	18
4	27	35	30	17	13	25	25	50	20	36
5	9	5	4	12	–	12	25	–	20	–
SELF MANAGEMENT AND COMPETITIVE SKILLS										
1	19	16	23	21	13	20	12	–	25	27
2	21	10	7	29	53	20	25	–	–	36
3	34	47	54	29	20	28	12	50	50	18
4	20	26	15	17	7	22	12	50	25	18
5	6	–	–	4	7	8	37	–	–	–
WORK AND STUDY SKILLS										
1	15	5	21	25	7	15	25	–	–	18
2	20	5	18	25	53	18	–	50	20	27
3	33	40	25	33	27	33	37	50	20	36
4	24	45	28	12	–	25	12	–	40	18
5	8	5	7	4	13	8	25	–	20	–
SOCIAL AND CO-OPERATIVE SKILLS										
1	13	5	22	29	12	8	12	–	–	9
2	14	15	18	12	–	14	–	–	40	18
3	26	35	15	25	37	24	37	50	20	27
4	33	40	26	29	25	38	25	50	20	36
5	12	1	18	4	25	14	25	–	20	9

Table B3-1 (Contd.)

NUMERACY SKILLS										
1	25	15	28	39	13	22	50	–	40	27
2	44	35	40	48	80	37	37	50	40	45
3	19	40	20	4	7	22	12	50	–	18
4	10	10	12	4	–	15	–	–	20	9
5	2	–	–	4	–	3	–	–	–	–
PHYSICAL SKILLS										
1	48	50	56	56	40	42	86	–	40	54
2	29	35	28	26	47	27	–	50	40	27
3	13	15	8	9	13	17	14	–	–	9
4	7	–	8	4	–	12	–	50	20	9
5	2	–	–	4	–	3	–	–	–	–

Note: scale - 1 = not useful, 2 = marginally useful, 3 = moderately useful, 4 = highly useful, 5 = very highly useful.

* Numbers are in percentage and rounded.

** Average is the questionnaire-wide response.

Table B3-2

Role compared to rating of Schoolsnet's usefulness for contributing to essential learning areas

	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	Other
	%	%	%	%	%	%	%	%	%	%
LANGUAGE AND LANGUAGES										
1	11	5	18	19	6	9	–	–	–	33
2	7	–	7	5	6	10	–	–	20	–
3	19	20	22	29	20	12	40	–	20	33
4	39	40	33	43	40	47	20	50	20	11
5	24	35	18	9	26	22	20	50	40	22
MATHEMATICS										
1	23	11	32	22	27	20	20	–	25	44
2	39	44	32	33	47	41	40	100	75	–
3	23	16	24	28	20	21	40	–	–	33
4	12	11	12	11	7	14	–	–	–	22
5	3	11	–	6	–	7	–	–	–	–
SCIENCE AND ENVIRONMENT										
1	10	6	24	14	7	5	–	–	–	22
2	15	11	12	14	7	21	–	–	25	11
3	33	28	36	29	40	39	71	–	–	11
4	29	44	12	24	33	25	29	50	75	44
5	13	11	16	19	13	10	–	50	–	11
TECHNOLOGY										
1	7	10	12	18	7	3	–	–	–	–
2	5	5	4	9	–	9	–	–	–	–
3	13	–	16	–	20	15	43	–	25	22
4	35	58	28	36	33	33	14	–	75	22
5	38	26	40	36	40	40	43	100	–	56
SOCIAL SCIENCE										
1	11	6	20	15	7	9	–	–	–	11
2	17	11	24	10	20	25	–	–	–	11
3	29	44	24	20	21	29	80	–	50	22
4	31	28	28	35	40	23	20	50	50	44
5	11	11	4	20	6	14	–	50	–	11
THE ARTS										
1	23	22	37	21	20	22	20	–	–	22
2	38	50	29	21	47	40	40	–	50	33
3	28	28	25	42	27	25	40	50	–	33
4	10	–	4	10	7	13	–	50	50	11
5	1	–	4	5	–	–	–	–	–	–

Table B-2 (Contd.)

PHYSICAL DEVELOPMENT										
1	48	44	60	47	47	40	60	50	75	62
2	32	44	28	41	40	33	20	–	25	–
3	15	11	8	6	13	20	20	50	–	25
4	4	–	4	–	–	7	–	–	–	12
5	1	–	–	6	–	–	–	–	–	–
PERSONAL DEVELOPMENT										
1	18	28	28	26	7	10	17	–	–	33
2	14	6	20	16	13	15	–	–	50	–
3	32	39	12	21	47	34	50	100	–	44
4	25	22	24	21	27	29	17	–	50	11
5	11	6	16	16	7	10	17	–	–	11

Note: scale - 1 = not useful, 2 = marginally useful, 3 = moderately useful, 4 = highly useful, 5 = very highly useful.

Table B4-1

Role compared with charging preference for Schoolsnet

Other	Avg.	Prin.	ADP	HOD	SnrT.	Teach.	ATTA	Lib.	Technical	
	%	%	%	%	%	%	%	%	%	%
Annual subscription	29	15	31	40	25	26	50	–	25	43
Ann. sub. with equity	16	12	28	13	25	15	13	20	–	7
Bill for usage	13	3	6	10	25	21	–	–	–	29
Sub & time based	24	39	22	20	20	24	13	40	38	–
Other	6	–	6	7	–	3	13	–	25	7

Table B5-1

Low-frequency users' rating of Schoolsnet usefulness in teaching essential skills and assisting in the essential learning areas

	Comm.		Info.		Probs.		Self		Work		Soci.		Num.		Phys.*	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ESSENTIAL SKILLS IN NEW ZEALAND CURRICULUM																
1	10	13.7	10	13.9	15	21.4	21	30.9	17	23.9	15	20.8	27	39.1	42	60.9
2	9	12.3	11	15.3	12	17.1	15	22.1	15	21.1	15	20.8	23	33.3	14	20.3
3	14	19.2	13	18.1	24	34.3	19	27.9	20	28.2	24	33.3	14	20.3	7	10.1
4	25	34.2	22	30.6	15	21.4	11	16.2	15	21.1	12	16.7	4	5.8	4	5.8
5	15	20.5	16	22.2	4	5.7	2	2.9	5	5.6	6	8.3	1	1.4	2	2.9

	Lang.		Maths		Science		Tech.		Soci.		Arts		Phys.		Person.**	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ESSENTIAL LEARNING AREAS OF THE CURRICULUM																
1	8	12.1	19	30.6	10	15.6	9	13.6	11	17.2	20	32.3	35	57.4	14	21.5
2	6	9.1	24	38.7	13	20.3	3	4.5	15	23.4	26	41.9	17	27.9	11	16.9
3	17	25.8	10	16.1	19	29.7	11	16.7	18	28.1	13	21.0	7	11.5	18	27.7
4	23	34.8	6	9.7	15	23.4	24	36.4	16	25	3	4.8	2	3.3	17	26.2
5	12	18.2	2	3.2	7	10.9	19	28.8	3	47	–	–	–	–	5	7.7

Note: scale - 1 = not useful, 2 = marginally useful, 3 = moderately useful, 4 = highly useful, 5 = very useful.

* Comm. = Communication skills, Info. = Information skills, Probs = Problem-solving and decision making skills, Self = Self-management and competitive skills, Work = Work and study skills, Soci. = Social and co-operative skills, Num. = Numeracy skills, Phys. = Physical skills.

** Lang. = Language and languages, Maths = Mathematics, Science = Science and environment, Tech. = Technology, Arts = The arts, Phys. = Physical development, Person. = Personal development.

Table B5-2

As a low-frequency user, what support did you get?

Support	Total response		Low user response	
	N	%	N	%
None	24	11	7	7
Guide	88	39	29	30
Colleague	80	35	44	45
Outside colleague	10	4	3	3
Friends	16	7	4	4
SN Helpdesk	66	29	21	22
LEA IT Helpdesk	63	28	24	25
Computer staff	6	3	3	3
IT teacher development	86	38	44	45
Other	14	6	3	3

Table B5-3

Schoolsnet promotion among low-frequency users

Promotion	Total response N	Total response %	Low-user response N	Low-user response %
Training	57	25	19	20
"Buddy training"	71	31	19	20
Committee	19	8	4	4
Meeting	35	15	14	14
Noticeboard	6	3	3	3
Not	71	31	38	39
Other	24	11	12	12

Table B6-1

Response by school type and size

	Frequency	Percentage
AREA		
Large	3	1.3
Medium	2	0.9
PRIMARY		
Large	89	39.4
Medium	52	23.0
Small	9	4.0
SECONDARY		
Large	24	10.6
Medium	42	18.6
Small	5	2.2

Table B6-2

Response by school type and region

Region	Area N	Area %	Primary N	Primary %	Secondary N	Secondary %
Auckland	–	–	44	19.47	37	16.37
Bay of Plenty	–	–	7	3.10	–	–
Canterbury	2	0.88	1	0.44	8	3.54
Gisborne	–	–	–	–	1	0.44
Hawkes Bay	–	–	6	2.65	–	–
Manawatu	–	–	6	2.65	–	–
Northland	1	0.44	5	2.21	9	3.98
Otago	–	–	7	3.10	–	–
Taranaki	–	–	–	–	2	0.88
Waikato	–	–	31	13.72	–	–
Wellington	2	0.88	43	19.03	14	6.19

Appendix C

Computer Terms Used in this Report

- Schoolsnet — Ministry of Education's Schoolsnetwork run by schools network unit in Wellington.
- E-Mail — Electronic mail either within Schoolsnet, to another person who has a Schoolsnet account, or to anyone on the Internet with an e-mail address.
- Telnet — Remote Login to another computer using the computer you are using as a terminal.
- Noticeboard — An electronic noticeboard for storing and reading information, usually by category or group.
- TP — Terminal Phone, or Chat, communicate online, real time with another person. The screen is split with one person typing in the top half, the other in the bottom half and both of you see what each other writes.
- DT — Document transfer moving a file from one computer to another.
- Internet — Term used when referring to the global connectivity between all the networks. (Schoolsnet is one network that connects to the Internet).
- WWW — World Wide Web, a graphical software standard of moving through databases and communicating via computers on the Internet.
- Lynx — A text only browser (software) for using the W.W.W.